THE

# Chicago Medical Journal

AND

# EXAMINER.

VOL. XXXIII.—DECEMBER, 1876.—No. 12.

## Original Communications.

### THE THERAPEUTICS OF EPILEPSY.

BY ALLAN McLANE HAMILTON, M.D.,

VISITING PHYSICIAN TO EPILEPTIC AND PARALYTIC HOSPITAL, BLACKWELL'S ISLAND, NEW YORK CITY, ETC.

The object of this paper is the discussion of the present method of treating that most discouraging and imperfectly understood form of disease, Epilepsy. I wish more particularly to consider the value of the bromides, and at the same time to detail recent investigations undertaken to support a statement I made at the last meeting of the American Neurological Association, where I advocated the *medium dose*, and endeavored then to show that of late there is an unwise tendency to administer these drugs in dangerous quantities.

I may be pardoned, perhaps, in calling attention to certain practical points which may appear unimportant to some, but an experience gained from the management of a great many cases teaches me they are to be carefully considered in selecting a plan of treatment. These simple indications, I am convinced, are too often overlooked, even by painstaking and careful medical men. I allude to the necessity for discovering the

exciting cause. I am every day made to feel that the idiopathic cases do not form so large a proportion as they were once thought to. With this belief I am satisfied that empiricism and routine management are bad methods. Any one who examines all his cases thoroughly will recognize the delicate shades in epilepsy, variations which are exhibited in other diseases presenting more pronounced and better defined symptoms; consequently there are evidences of pathological action, which are not always grouped alike, and consequently all cases are not to be treated in the same manner. I ascribe the moderate success I have had in the management of this disease to the recognition of these differences.

Not only may obstinate epilepsy result from masturbation, but it may be due to many of the diseases of women, and is produced by other eccentric irritations of various kinds, or by centric irritation, such as may be associated with toxæmia.

Sir Charles Locock (*Med. Times and Gazette*, May 23, 1853,) called attention to many cases that he had treated where uterine irritation was the exciting cause; and I think others have had the same experience. In one of Locock's cases the patient was affected particularly at the menstrual periods.

Some of these peripheral causes are curious in the extreme. Through the kindness of Dr. Gibney, of New York, I was enabled to see a child who had accidentally injured her ear with her parasol, the brass tip of which remained for some time imbeded in the external auditory meatus. As a result, convulsions of an epileptic character were caused, and it was not until some time afterward that the foreign body was discovered and removed. In another case I treated, the Epilepsy was unmistakably due to a bad habit the woman had of wearing a number of heavy garments about her hips, which produced some uterine change. When this condition of affairs was noticed, and the skirts removed, she immediately recovered. At the root of many epilepsies, as well as other neuroses, are reflex causes — the starting point being the organs of digestion, or those contained in the pelvis. Of course there are varieties of epilepsy of an idiopathic nature, or others caused by traumatism or organic disease; and these will defy

the best directed efforts of the physicians, and we can do nothing.

We should not lose sight of syphilitic epilepsy where pain always precedes the attack. It is generally curable.

In prescribing for our patient there are five indications to observe:

1. Removal of exciting cause, if possible.
2. The diminution of exaggerated reflex susceptibility of the medulla.
3. Equalization of cranial circulation.
4. Abortion of paroxysms.
5. Improvement of general condition.

For the accomplishment of these, it is imperative that a judicious and discreet selection of drugs should be made; and as those which are the most effective I may mention:

The Bromides: Sodium, Potassium, Calcium, Lithium, Iron.
Belladonna.
Digitalis.
Strychnine.
Ergot.
Arsenic.
Amyl Nitrite.
Tri-Nitro-Glycerin.
Cod Liver Oil.

I have not classified these remedies, as it is unnecessary to do so; but will now say a word in regard to their usefulness:

No one drug can be declared a specific — as I am sorry to see has been done — and we must not be too eager to accept the sanguine results of certain over-enthusiastic authorities, and be governed thereby. I allude more especially to the almost universal use of the bromides, to the exclusion of everything else, and also to their employment in quantities, which often ruin the patients, and at any rate produce a condition of diminished vitality — which is inconsistent with any hope of success. [1] Radcliffe's idea in this respect is a good one: "There is reason to believe that the therapeutics of convulsion

[1] Radcliffe. Pain, Epilepsy and Paralysis, p. 215.

must be based upon the notion that vital power has to be reinforced, and not upon the contrary opinion." What the proper dose is, has not been clearly settled by any one. There are neurologists who believe in toxic doses, and there are others who prescribe quantities which are almost small enough to be inert. In England it has been the custom to prefer the very small doses. I have seen the prescription of a very distinguished general practitioner, who thinks five grains of the bromide of potassium a sufficient dose. [1] Ringer recommends from 30 — 60 grains in the day; [2] Radcliffe, 45 grains; [3] Russell Reynolds, 30 — 90 gains; [4] Bartholow, 30 — 240; and [5] Hammond, 90 — 240 grains during the day. [6] Handfield Jones remarks that there is a great difference in the tolerance of individuals in regard to the bromides — some persons not being able to stand five grains, while others will not be affected by doses of less than forty grains in amount.

My own experience has taught me that the best effect can be gained by the repeated administration of sixty grains in the twenty-four hours. The larger doses produce rapid bromism, while a medium dose seems to be better appropriated, but will do just as much mischief in the way of bromism as the larger ones, if given for a length of time. My records show me that the average time for development of symptoms of this kind is about three months, while anæsthesia of the fauces is produced in a few weeks, or even a much shorter time; and I agree with others that it is necessary to produce this condition before we can say that the medicine has produced its physiological effect. Brown-Séquard considers the appearance of acne to be an indication that the medicine has begun to do its work, in which opinion he is joined by [7] Dr. Putnam-Jacobi. [8] Voisin considers the "point of saturation to be indicated by the

[1] Handbook of Therapeutics, p. 92.
[2] Pain, Epilepsy and Paralysis, p. 202.
[3] System of Medicine, p. 323. Vol. II.
[4] Materia Medica and Therapeutics, p. 371.
[5] Clinical Lectures on Nervous Diseases.
[6] Functional Nervous Diseases, p. 325.
[7] Oral communication at Am. Neurological Association.
[8] Voisin, Archiv. de Médecine, Jan., 1873.

anæsthesia of the pharynx and nares, so that in one case nausea is not produced by titillation with a spoon, and in the other sneezing and weeping does not follow the introduction of a straw into the nasal cavity." I should consider the latter a rather severe test. According to Danton[1] the bromides act as vascular medicaments, diminishing excito-motor power. They act on the unstriped muscular fiber, producing local anæmia and moderating excitation resulting from temporary or permanent congestion. [2] "They are agents that pass very rapidly into the blood (Ringer), and consequently their effects are very immediate, and they accumulate till the point of saturation is reached before they are eliminated in anything like considerable amounts." We are all aware that repeated and large doses of these drugs are followed by a most disagreeable and pernicious state of affairs. [3] Voisin has referred to two forms of poisoning, which he has divided into the slow and rapid. In the first the complexion becomes muddy, the eyes sunken, sight and hearing poor, and memory obscure. The patient cannot write, and cannot express himself, as he forgets words — there is tremulousness. In the other variety of the *slow* form there is dementia, or delirium with maniacal outbursts. Ataxia is also a feature of this variety. In the *rapid* form — that with which we are most familiar — somnolence, headache, uncertain walk, difficulty of speech, loss of expression, "fishiness" of the eyes, drooling of saliva, etc., etc., are the ordinary symptoms.

Various grades of toxæmia, or even a state which Voisin calls the "cachexie bromique," and which terminates in a typhoid condition, may result from a reckless use of this drug.

As regards the variety of bromide, I think the sodic is the most reliable and stable; the potassic salt varying very much in strength. The others either have a tendency to deliquesce, or are expensive. It will be advisable to keep the solution in a tight-stoppered bottle, and have fresh quantities put up constantly, as it is very apt to undergo changes — in which

[1] Danton. Thèse de Paris, 1874.
[2] Ringer. Handbook of Therapeutics, p. 91.
[3] Voison. Archiv. de Médecine, Jan., 1873.

the bromine is evolved. And now a word regarding the time of administration. It has been shown repeatedly that these salts are much better absorbed when the stomach is empty. I have found also that a heavy dose at night is apt to do more good than if the amount prescribed is equally divided up through the day. In a great many patients I have found the attacks to occur at the waking hour, and I suppose this is due to the sudden change in the cerebral circulation. A mild diffusive stimulant has overcome this, and in many cases warded off the attack. I direct my patients who have their convulsion at this time to keep a glass of sherry or a small quantity of Spts. Ammoniæ Aromaticus near at hand, to be taken before arising. Cold douches to the head are valuable. If the attacks be irregular, it will be found necessary to divide up the dose.

The treatment of the disease in women should be directed as well to the pelvic organs. It will be found that the bromides will markedly affect the flow, and relieve the pain or uneasiness which is connected with the menstrual period. Locally I have found that cold applied for a few minutes daily over the ovaries, will modify the attacks should they be connected with irritation of any of the pelvic viscera. The progress of the disease should be soon modified by the doses I have recommended, and it will be seen by the table condensed from that prepared by Dr. Hollis and published in the *British Medical Journal*,[1] that even smaller doses modified or cured the majority of the cases he cites. At the Epileptic and Paralytic Hospital, where most of the cases are the very worst that can be collected as regards chronicity, I find that sixty grains a day will cut short the attacks of a great many patients, and I have cured a number of private patients by this method. Dr. Hollis' cases were not selected, and are evidently hospital patients, like my own.

[1] Br. Med. Journal, July 1, 1876, p. 4.

## ANALYSIS OF ELEVEN CASES OF EPILEPSY.

S. B.—Sodic Bromide. P. B.—Potassic Bromide.

| NO. OF CASE. | SEX & AGE. | DURATION OF DISEASE. | AVERAGE NO. OF ATTACKS BEFORE TREATMENT | MAXIMUM DOSE. | MINIMUM DOSE. | DIMINUTION. | REMARKS. |
|---|---|---|---|---|---|---|---|
| 1 | Male, 15 | Since birth | 1-2 weekly. | S.B. gr. xx, t.i.d. | S.B. gr. xv, t.i.d. | 2 in 8 weeks | Weak intellect. |
| 2 | Male, 22 | Two years. | 1-2 weekly. | S.B. gr. xv. | ..... | 1 in 20 wks. | Disease followed sunstroke; treatment lasted 3 months. |
| 3 | Male, 25 | One year .. | 1 or more in week, sometimes many in a day ..... | S. B. xxv., P.B. gr. xxx | S.B. gr. ij.. | None in 8 weeks .... | Hard drinker, feeble intellect; Potassium salt inert. |
| 4 | Fem., 2 | 18 months . | 1-2 weekly, sometimes 3 in a day. | Very small doses..... | ..... | None in 8 weeks .... | Fits followed dentition; ricketty constitution. |
| 5 | Fem., 18 | One year .. | 1 a week... | S.B. gr. xxx | Gr. xx ..... | None in 4 weeks .... | Tuberculous disease. |
| 6 | Male, 18 | Five years. | 4 in week.. | S.B. gr. xv. | ..... | None from 5 weeks... | No affection of intellect. |
| 7 | Fem., 11 | Five years. | 2-3 in week | S.B. gr. xx. | S.B. gr. xv. | 1 in 5 weeks | Followed a blow; subject to headache. |
| 8 | Fem., 17 | Several mos | Sometimes 4-5 daily.. | S.B. gr. xv. | ..... | None after treatment. | Has bitten tongue. |
| 9 | Male, 20 | 19 years.... | 2-3 weekly. | S.B. gr. xl. | S.B. gr. xv. | No fits for 2 weeks... | No aura. |
| 10 | Male, 13 | Two years. | 3 weekly.... | S.B. gr. xxv | S.B. gr. xv. | 1 in 3 weeks | Well developed disease, facies Epileptica well marked. |
| 11 | Male, 25 | Eleven yrs. | 1 in 2 weeks | S.B. gr. xx. | ..... | 1 in 5 weeks | No fits since beginning of treatment. |

By this table it will be seen that from fifteen to twenty grains of the sodic salt were required to immediately decrease the number of attacks.

Below will be found two tables. In one are tabulated the interesting features of twelve cases of epilepsy. They are old hospital patients, and had applied for admission after outside treatment had been exhausted. Even here the bromides, in the doses I have given, seem to do much for the sufferer. Syphilis, traumatism and actual insanity make the prognosis as bad as it well can be, and treatment is simply palliative. Large doses have aggravated many of these cases.

The other observations are selected from my note book, and are illustrative of the efficacy of the dose I have advocated.

Bromism occurred in spite of all I could do in most of them, though it was a mild form and under control. They were all patients of the better class, and of course had all the advantages of comfortable homes, attentive friends, substantial food and good air, although many of them were inclined to overeating, as in fact all epileptics are. In this respect there is an advantage in favor of the poorer patients, who cannot obtain rich food.

## ANALYSIS OF TWELVE CASES OF CHRONIC EPILEPSY.

S. BR.—SODIC BROMIDE. P. BR.—POTASSIC BROMIDE. H. BR.—HYDROBROMIC ACID.

| NO. | AGE. | DURATION OF DISEASE. | AVERAGE NO. OF ATTACKS BEFORE TREATMENT. | AVERAGE NO. OF ATTACKS DURING TREATMENT. | MAXIMUM DOSE OF DRUG. | MINIMUM DOSE OF DRUG. | FORMER TREATMENT. | DURATION OF PRESENT TREATMENT. | REMARKS. |
|---|---|---|---|---|---|---|---|---|---|
| 1 | 28 | 16 years | 1 monthly. | 1 in 2 months | P. Br. gr. xx., t.i.d. | P. Br. xv. t.i.d. | ..... | 6 months. | Has taken H. Br. for 1 month—fits increased. |
| 2 | 25 | 12 years | 6 monthly. | 1 monthly .... | H. Br. 1 dr., t.i.d.... | ..... | S. Br..... | 1 month.. | Melancholic. |
| 3 | 25 | 20 years | 18 monthly. | 3 weekly..... | Ergot (for 1 month) | ..... | ..... | 6 months. | When under S. Br. attacks were 3 in month. |
| 4 | 37 | 14 years | 4 monthly. | 1 monthty .... | P. Br. gr. xx., t.i.d. | P. Br. xv. t.i.d. | S. Br..... | 1 month.. | Masturbates. |
| 5 | 19 | 6 years | 7 monthly. | 1 monthly .... | S. Br. gr. xx., t.i.d. | ..... | P. Br..... | 4 months. | Hysterical. |
| 6 | 20 | 19 years | 2 monthly. | 1 in 6 weeks . | P. Br. gr. lx., daily. | S. Br. x. t.i.d .. | Chloral,etc. | 6 months. | |
| 7 | 22 | 10 years | 21 monthly. | 2 weekly..... | P. Br. gr. lx., daily. | ..... | ..... | 9 months. | Menstrual complication. |
| 8 | 23 | 6 years | 7 monthly. | 1 weekly..... | P. Br. gr. xv., t.i.d. | ..... | ..... | 6 months. | |
| 9 | 18 | 4 years | 8 monthly. | 1 monthly .... | F.ExErg.½ dr.,t.i.d | ..... | ..... | 4 months. | Bad habits. |
| 10 | 23 | 23 years | 3 monthly. | 1 in 2 months | P. Br. gr. xv., t.i.d. | ..... | ..... | 4 months. | |
| 11 | 29 | 27 years | 5 monthly. | 1 in 3 months | S. Br. xx., t.i.d..... | ..... | ..... | 6 months. | Bad habits. |
| 12 | 25 | 12 years | 6 monthly. | 1 weekly..... | P. Br. gr. xx., t.i.d. | S. Br. xv. t.i.d.. | ..... | 3 months. | |

## ANALYSIS OF FOUR SUCCESSFUL CURES OF EPILEPSY WITH MODERATE DOSES OF THE SODIC BROMIDE.

G. M.—GRAND MAL. P. M.—PETIT MAL.

| NO. | AGE. | SEX. | DURATION. | NO. ATTACKS BEFORE TREATMENT. | NO. OF ATTACKS DURING TREATMENT. | AFTER FIRST YEAR. | AVERAGE DOSE, ETC. | DURATION OF ACTIVE TREATMENT. | CONTINU'D SUBSEQUENT TREATMENT. | VARIETY OF DISEASE. | PERIOD UNDER OBSERVATION. | REMARKS. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 15 | M.. | 10 years | G. m., about 4 weekly; p.m. 10, 40 daily... | For first 3 mos. 5; for next 6 mos., none .. | 2 in 2 years. | 20 grains Sodic Brom., t.i.d.; auxil'ry treatment; Ergot, Arsenic, Iron, etc. ..... | About 9 mo. | X–xx grs. Sodic Bromide at night; strict hygienic care | gm. at night | 4 years..... | Bright boy; Epileptic habit almost confirmed; intelligent parents, who aided in general management & discipline; apparently idiopathic origin. |
| 2 | 29 | F .. | 12 years | 1 to 2 weekly; g. m..... | After xx. grs., S. Br. 2 in a week, 3 in next 2 weeks, 1 in next 5 weeks, 2 in next month, 1 in next 4 mos. 1 in next 9 months .. .. | 3 in 2 years. | Cod Liver Oil, Sodic Bromide, xxv. grs., t.i.d.; atropia hypoder'cally | About 19 mo | Gr. x., t.i.d. ... | Mixed ..... | About 4 yrs | Over study; hysterical; no uterine trouble. |
| 3 | 36 | M.. | 9 years | 1 or 2 every 2 months; g.m. | S. Br. gr. xx. at night; 3 in 7 months ..... | 1 in 1½ yrs. | S. Br. gr. xx., at night ..... | About 2 yrs | Gr. x-xx., t.i.d. Sea voyage; cod liver oil. | Nocturnal . | About 3 yrs | Business man; overwork; supposed blow on head; attacks excited by over-eating. |
| 4 | 17 | F .. | 5 years | About 2 m'thly | S. Br. gr. xx., t. i.d.; Ergot increased them to about 5 m'thly; worse at menstrual periods; stopped Ergot; fits about once a month ..... | 1 in 2d year; none to date, Sep. 20, 1876. | S. Br. gr. xx., t. i.d.; uterine treatm't; Syr. Lacto-phos., Arsenic..... | About 4 mo. | Lacto-phos. of Lime; S. Br. gr. v., t.i.d. for 6 months. | Mixed; generally mutational.. | About 4 yrs | Case undoubtedly dependent upon anteversion of uterus; immediate cessation of disease when the position of this organ was rectified. |

And now regarding the large doses. If the idea is to thoroughly ruin the patient's health, enfeeble his mind, or perhaps drive him to an asylum, the toxic administration may be indulged in. It is very true that sometimes a rapid restoration may be brought about by "Iron and Quinine;" but there are many cases where the recovery is not quite so complete as one could wish for. Memory is enfeebled, and there is a cachexia which remains for an indefinite time. A darker side of the picture is not always displayed when brilliant results are detailed. This is the list of demented and those that have died. My friend, Dr. Janeway, was present at the autopsies of two patients who died brominized — for certainly the examinations disclosed no other cause for death. I myself have seen several demented cases, and I have no doubt others could tell the same story.

Belladonna and its alkaloids are of great value when the seizures occur in the daytime, or are of the variety known as *petit mal*. I have injected the Sulphate of Atropia in $\frac{1}{64}$ gr. doses beneath the skin at the back of the neck with good effect, and have given it in the manner directed by Trousseau. In either way it should be administered until dryness of the throat is obtained, and should be given a patient trial. The property possessed by belladonna of blunting reflex susceptibility assures it a great advantage over other methods of treatment, when there are centers of irritation such as in gastric epilepsy.

In Ergot we have a remedy which controls the cranial circulation much more readily than any drug I am acquainted with. As the object is to diminish the congestion at the floor of the fourth ventricle, its combination with the bromides greatly increases the action of the latter. Ergotin may be given alone in the form of Bonjean's capsules.

To [1] Tyrrell belongs the credit of suggesting Strychnine. He believes that this remedy controls excitation of the medulla oblongata. In one individual who averaged fifty-one attacks in a month, the number was reduced by the Strychnine to

[1] Med. Times and Gazette, May and Aug., 1867.

eleven in two years. [1] Handfield Jones does not favor the remedy, nor do others, although it has advocates in this country. In small doses it certainly does good; but I have found that in larger doses than $\frac{1}{30}$ gr., ter in die, it rather aggravates the disease.

Arsenic is excellent, both for its anti-periodic and alterative action, and as an agent to relieve the acne. [2] Clemens, of Frankfort, has lately advocated the Bromide of Arsenic, but in such small doses as to seem useless. He claims for it remarkable virtue when the disease depends upon idiocy, and appears in patients with deformity of the skull. He reports two cures.

Where there is an irregularity of heart action, sluggish circulation, blueness or duskiness of the skin, I think digitalis is indicated; in fact, I generally use it in every chronic case. It is a drug well tolerated by epileptics, who can take it in surprisingly large doses.

An agent has been lately given to the profession which seemed all that was needed at first, but which I am convinced is very much over-estimated, except as an abortant. I speak of the Amyl Nitrite. Drs. Weir Mitchell, Zeigler and Alexander McBride, as well as several foreign writers, have praised it, and several cures have been reported. In epilepsy there seems to be a "habit," (if I may use the expression,) or tendency to periodicity. Amyl is well adapted to stop this, as is any other remedy of the same class. Crichton Browne alludes to the effects of this drug upon the *status epilepticus*. His patient had had a great succession of fits, and was at the point of death—the pupils were contracted to an intense degree, pulse 116, temperature 102°, with stertorous breathing. Voluntary movements and yawning were caused by inhalation of the Amyl Nitrite, and the patient subsequently raised his head and looked about him. Dr. Browne relates ten other cases which were seen with Dr. Mierson.

[1] Handfield Jones' Functional Nervous Affections, p. 326.

[2] Allg. Medicinische Central Zeitung, May 24, 1876.

Dr. C. Steketec [1] draws the following conclusion in regard to the action of this drug in Epilepsy:

"It exerts an important influence where the epilepsy is due to, or connected with cerebral anæmia, for the reason that it 'anticipates the attack when there are prodromata — cuts off the attack when it appears, relieves symptoms due to interrupted innervation after the attack—and the attacks become less frequent'" (? by the author). He also considers it injurious where the attacks are due to cerebral hyperæmia, for the reason that they last longer and become more frequent, and when either maniacal or convulsive, increase in intensity.

My own experience with Amyl Nitrite has clearly settled in my mind the fact that it has great virtues in cutting short or averting attacks, but that it has no permanent influence. Whether we can or cannot make the delicate distinctions of Dr. Steketec, future clinical experience I think must decide. Those who have used it say that it does good in a very limited number of cases; and it is a difficult task to decide which are to be benefitted. I have tried it in every grade of Epilepsy, and find in some of the worst cases, where the fits occur all through the day, with very slight intervals, and even where there is time enough to be prepared, that it is often of no avail. It may be given enclosed in the little glass capsules invented by Dr. McBride, of New York; for hospital use, and for patients who are not intelligent, in alcoholic solution.

I may be pardoned for bringing another remedy to the notice of the profession, and one that has never been used for this purpose. I allude to Tri-Nitro-Glycerine. Its properties are almost enough to intimidate the patient, but it is as powerful a medicinal agent as it is an explosive. The tenth part of a drop touched to the tongue is sufficient in a space of time which is almost inappreciable to produce a rapid cerebral hyperæmia. The face is flushed, the eyes become bright, and the temporal vessels throb, while at the same time there are the marked sensations of fullness. It produces more lasting congestion than does Amyl Nitrite, is much safer, and I have

[1] Thesis abstracted by Chicago Journal of Nervous and Mental Disease, April, 1874, p. 260.

found it to act better as an abortant than the latter. Any good pharmacist can prepare a solution containing one drop to ten of alcohol. This can be further diluted so that ten drops of alcohol shall contain one-tenth of a drop of the Nitro-Glycerine. It may be kept safely in this way, for alcohol prevents its explosion. A dose of a tenth of a drop is sufficient in the majority of cases.

Last of all, it seems almost unnecessary for me to direct attention to that most familiar remedy, Cod Liver Oil, which is so valuable in all nervous diseases.

Anstie treated a number of cases by Cod Liver Oil alone and cured seven out of twenty patients put upon this plan of treatment alone. Picrotoxin, a remedy recently brought forward, I have tried, and consider valuless.

The question of diet and personal habits are very important ones — particularly as the stomach is so often the seat of irritations which are transmitted to the over-active centers. Beyond the question of over-eating, it has been found that a vegetable diet is better suited to this class of patients. Mierson, in the last volume of the West Riding Reports, publishes cases and makes comparisons between those epileptics placed upon a meat and vegetable diet. The results pointed to the superiority of the latter. As the greater number of epileptics have inordinate appetites, the diet should be strictly regulated.

It is a good plan, I think, to combine the remedies I have alluded to; and in conclusion I take the liberty of presenting a prescription I have used for several years:

℞ Strychniæ Sulph. ..... gr. j.
Fl. Ext. Ergotæ ..... ℥ iss.
Sol. Potass. Arsenit. ..... ℥ ij.
Sodii Bromidi ..... ℥ iss.
Tr. Digitalis ..... ℥ iij.
Aquæ Menth. pip. ..... ad. ℥ iv.

M. Sig.: A teaspoonful before eating, in a half tumblerful of water.

If the attacks be of the form known as *petit mal*, I think either Ergot or Belladonna are our best agents. With either form of treatment it may be found often necessary to use auxillary general treatment. The syrup of the combined phos-

phates, or the syrup of the Lacto-Phosphate of Lime, are good adjuncts; and salt baths, cold head douches, regular food, early hours, and the breaking off of bad habits, will often cure the disease, even when it has lasted for many years.

As a last resort, should continued medication prove useless, the actual cautery or a deep seton at the back of the neck will occasionally arrest these bad cases.

123 East 30th Street, New York, Sept. 27, 1876.

---

## EXPERIMENTAL STUDY OF THE PROCESS OF REPAIR.

By I. N. DANFORTH, M. D.,

Lecturer on Pathology in Rush Medical College.

(Read before the Chicago Medical Society, August 7th, 1876.)

The successful study of the healing process, in all its stages, has always been a matter of great difficulty. Indeed, I am not aware that any observer has heretofore attempted making consecutive microscopic obversations at brief intervals, of the *same wound in living tissue*, from the time of its infliction to its complete repair; or of presenting figures drawn from nature, illustrative of this process. Let any one glance at the figures in "Billroth's Surgical Pathology" which are designed to illustrate the process of repair; it is evident that they are, in the main, diagramatic, and that they illustrate what is *supposed* to occur, rather than what is *known* to occur. And, in general, the difficulties standing in the way of such studies are simply insurmountable. The time required for the observation of the various steps of such a process necessarily occupies several days, and demands very careful, delicate and nearly constant attention from the operator.

It is requisite in the first place to find a transparent and vascular[1] tissue which can be retained in one constant position, and *yet be kept alive*, for several consecutive days. Again,

[1] The following account does not, of course, apply to non-vascular parts.

the animal which exercises ownership over this living tissue, must somehow be induced to remain perfectly passive and non-resistant during the entire period of time needful for the experiment; one single violent attempt to escape after the experiment is fairly under way, would be quite sufficient to spoil the whole. Lastly, some anæsthetic or paralyzing agent must be employed which will produce quietude without causing death. It will be seen at once that this series of conditions involves some difficulties which must be surmounted.

Some time ago, Henry W. Fuller, Esq., of this city, President of the Illinois State Microscopical Society, requested me to contribute something in the way of a popular, illustrated lecture, for the entertainment (if not profit) of the Society over which he presides. Having studied inflammation many times experimentally upon the web, tongue and mesentery of the curarized frog, and having thus familiarized myself somewhat with the use of this singular poison, it occurred to me that it might be possible to inflict a small wound in the frog's tongue, and then watch the progress of the process of repair. But in order to render the fruits of such a study practically useful and available, it was also necessary that the changes which took place from day to day be fixed in some permanent form so that *others* could see them. This would render the services of an artist indispensable. When I communicated my plan to Mr. President Fuller, he at once authorized me to proceed, and draw on him for the required expense. As a result of this characteristic liberality on the part of Mr. Fuller, I am now in possession of ten "Artographic Lantern Slides," which very beautifully and faithfully represent as many stages of this most interesting, and, as I believe, novel experiment. And here it is proper that I should briefly explain the "Artographic" process of illustration, as well as acknowledge my obligations to its originator, Dr. R. U. Piper, of this city.

The "Artographic Lantern Slide," is essentially a Photographic Lantern Slide, colored so as to quite perfectly imitate nature in many instances and enable us in all cases to differentiate the various tissues and structures by conventional colorings. In the present instance Dr. Piper made careful drawings

by aid of the camera lucida, as often as any change worth recording took place in the wound. These drawings, which were of course mathematically correct and all drawn to the same scale, were then transferred to glass by a process of etching, the application of which is original with Dr. Piper; the etchings were then photographed by Mr. P. B. Green, of this city, and the resulting transparencies were colored by Dr. Piper's own hand.

It seems to me that this beautiful process must come extensively into use for the purpose of anatomical and histological demonstration, because it appears to supply a real want. The ordinary photographic transparencies of anatomical structures are wanting in sharpness and definition, and it is impossible to indicate different tissues by the aid of different colors. These important *desiderata* are quite perfectly supplied by Dr. Piper's process.

If the reader is not already discouraged by this somewhat prolix explanatory introduction, I will now ask him to follow the course of the experiment from the date of the infliction of the wound, to its complete repair. On the evening of February 23, 1876, a healthy, active, medium sized frog was brought under the influence of curare, by the subcutaneous injection of about $\frac{1}{2000}$th of a grain.[1] The animal was then placed upon a frog plate, the tongue gently drawn out and its edges pinned to a piece of perforated cork, which was fitted to the opening in the frog plate; the perforation in the cork being covered by a slip of glass, upon which, of course, the tongue rested. Especial care was taken not to put the tissue of the tongue so much upon the stretch as to materially interfere with the free circulation of the blood, or the action of the blood-vessels.[2]

[1] I take pleasure in acknowledging my obligations to Lieut. Col. J. J. Woodward, M.D., of the Army Medical Museum, Washington, D. C. for a supply of genuine curare, without which this experiment would have been impossible.

[2] It must be remembered that the tongue of the frog is attached to the lower jaw in front, but is free posteriorly. In capturing insects the organ is thrown out of the mouth and drawn in again with inconceivable rapidity, the game being involved in a glutinous secretion.

A minute wound was now made through the tongue by means of a pair of sharp pointed scissors, lengthwise of the organ, or in the direction of the muscular fibres; care being taken to select an islet of tissue which was least vascular, and in which the few vessels were quite small. The frog was now placed upon the stage of the microscope, the changes of the next half hour closely watched, and a faithful camera drawing made by Dr. Piper; the first drawing being executed at 9 o'clock, on the evening of February 23d, or about one hour after the wound was made. The appearances at this time were as follows: the wound was rather more than one-sixteenth of an inch in length; its form was nearly oval, the edges having been drawn apart by the contraction of the muscular fibers. The bottom or floor of the wound was covered by a pretty firm blood clot; the blood having slowly oozed from the cut ends of the minute bloodvessels which occupied the track of the wound. In watching the escape of this blood from the vessels, I noticed this singular phenomenon, namely: that the escaped blood globules, or more properly the current of extra vascular blood, moved in compact and orderly columns across the floor of the wound; that is, after the vessels were cut and hæmorrhage had ensued, the escaped blood did not flow in *all* directions in a helter skelter disorderly manner, but formed itself into different columns, representing the different vessels from which it flowed, and these several columns advanced in regular order, with but little variation in their course, until two streams chanced to encounter each other, when the larger and stronger stream would generally bear away the smaller and weaker one.

In another hour all oozing of blood had ceased, coagula had formed in the wounded vessels up to the next collateral branch, and the condition of the wound and its immediate surroundings was that of apparent "masterly inactivity." The tongue was now (10 o'clock) covered with a light compress of muslin wet in water, the frog's skin moistened, and the animal laid aside for the night.

February 24th, 9 A. M., (12 hours after injury,) circulation is now active in all parts of the tongue, except immediately

arround the cut. In the immediate vicinity of the wound, the vessels are distended and gorged with blood, and stasis has occurred in the greater part of them. In some, however, the circulation is still wonderfully active and vigorous. The walls of the wound are mostly smooth and sharply defined, but from the (apparently) upper and lower border, a little bud, irregularly knotted, pale and terminating in a club-shaped extremity has commenced shooting out; the two buds (which are two masses of round cells) are almost opposite, and seem to be growing toward each other. "I have an impression," says the record which I made at the time, "that they are incipient blood vesels, and that I am about to witness the growth of new vessels." The floor of the wound presents, 1st, a few minute coagula, 2d, blood globules, both white and red, and 3d, a few pale, very minute fibers of fibrine. The changes were so slight, that it was not deemed necessary to make a drawing this morning.

February 25th, 9 A. M., (36 hours after injury.) "The little growing buds from which I expected so much, have undergone no further development since yesterday; in fact they have grown smaller." The minute fibers, on the floor of the wound have increased, and are interwoven in all directions, and in their interstices are many blood globules of both varieties. The surrounding vessels are enlarged, and somewhat tortuous; in vessels which show any movement of blood at all, the circulation is very active. Small coagula are seen at intervals along the border of the wound. The tissues surrounding the injury are becoming slightly cloudy, unlike the sharpness and clearness of the more remote strictures. On examining the tissues involved with No. 5 Hartnack, I can easily see that the cloudiness is due mainly to the migration of leucocytes, which are rapidly insinuating themselves into the[1] areolar and muscular interstices.

[1] I ought to have said before that the studies were chiefly made with Tolle's inch, and the "a" eye piece, a combination giving on my microscope about 85 diameters; the drawings were all made from this combination. The quarter inch was employed daily however, for the purpose of studying the minute changes.

February 26th, 9 A. M., (60 hours after injury.) The wound is considerably smaller; the cloudy appearance of the surrounding tissues has increased; the border of the wound is now quite thickly fringed with little buds or protrusions, which, upon being examined with a quarter inch, are seen to be composed almost exclusively of cells. In some of these growing buds, a minute blood-vessel, with its tiny blood stream, can be made out. These vessels are always in the form of loops, a single minute current flowing into the cell bud through one branch of the loop, and immediately returning through the other. Here, then, we have a granulation growing up under our eyes, under conditions which admit of its being quite freely observed in a leisurely and satisfactory manner.

The circulation in the vicinity of the wound is very active; the blood-vessels are dilated and tortuous; stasis is no longer present except in a few quite small vessels. The veins in the periphery of the microscopic field are enormously distended, and the blood stream is both very dark and very slow. In some of the vessels in sight, the jerky, interrupted movement of blood, so often described by authors as occurring in inflammation, can be very distinctly seen. Many blood globules are seen on the floor of the wound, but the net work of fibers spoken of in yesterday's record has nearly disappeared.

February 27th, 9 A. M., (84 hours after injury.) The area of the wound is no smaller than it was yesterday; in fact it seems a little larger. New vessels are multiplying around the wound, and new buds are pushing their way into the open space. The floor of the wound is now occupied by a thickly woven reticulated net work of minute fibers of coagulated fibrine, which have formed since the last observation. The interstices are filled by blood globules, both red and white. The circulation is very active, and the frog seems in good health.

February 28th, 9 A. M., (108 hours after injury.) The size of the wound has diminished very greatly since yesterday. No other marked change has taken place; the circulation seems neither more or less active than it was yesterday; new

vessels are still forming; new granulations are springing up, and the size of the wound is rapidly diminishing.

February 29, 9 A. M., (132 hours after injury.) Several new blood vessels appear this morning, and the pre-existing ones, especially the veins are enormously dilated. The wound diminishes with great rapidity. The walls or "banks" of the wound now present a very curious and interesting appearance. At short intervals, little simicircular rills of blood are seen running along the shelving and somewhat precipitous "banks." Each little semicircle, or loop, is covered in by a dense layer of small round cells; the deeper layer of cells assume a spindle form; thus new fibers are formed, and the wound is repaired.

March 1st, (156 hours after.) The cut is now reduced to a minute oval slit, and the floor is quite covered with minute newly formed fibers, interwoven in all directions. Meantime, new granulations are continually forming along the side-walls or banks of the injured part, and thus the solution of tissue-continuity is being repaired.

March 2d, (180 hours after.) With this record, the daily observation ceases. The wound is now practically closed, and its original area is nicely mapped out by the presence of new (cicatricial) tissue.

March 8th, (fourteen days after the infliction of the wound.) The frog was again curarized, the cicatrix examined, and a careful drawing made. It was easy to trace the exact extent of the injury by the lighter color of the new tissue. The cicatrix was entirely made up of new connective tissue; no regeneration of muscular tissue could be discovered. The new connective tissue appeared to be entirely the product of spindle-shaped cells, interwoven in all directions.

On a future occasion, the series of photographic pictures will be shown to the Society, projected on the screen, if an opportunity is afforded.

In conclusion, I desire briefly to call the attention of the Society to the lessons which the experiment has afforded:

*First*—And as it seems to me most important, is the demonstration of the fact, that continuous experiments in physiology

and pathology may be successfully and profitably carried on outside of special laboratories. When the frog is placed under the influence of curare, perfect quietude is insured, and the charge of cruelty no longer obtains. According to Dr. J. Burdon Sanderson, chloral may be made to answer the same purpose, from one to three grains in solution, being injected under the skin. The effect of chloral, however, is less permanent than that of curare; a dose of the former quiets the frog for six or eight hours only, while it takes fully twenty to twenty-four hours to recover from the influence of a single dose of curare.

*Secondly*—I was surprised at the frequent changes in the condition of the blood-clot in the wounded part, and at the frequency of the escape of fresh masses of blood. At first free hæmorrhage occurred, and the cavity of the wound was speedily filled with a coagulum. In a short time, the red globules had nearly disappeared, an intricate network of fine fibrinous fibres had formed, and in the interstices of this network, multitudes of mobile cells (*i. e.*, leucocytes) had accumulated. A few hours later, this clot had nearly disappeared, the fibers were wanting, except at the periphery of the wound, but a great number of leucocytes still remained and continued their wanderings over the floor of the wound. Several times while the tongue was under examination, the tenuous walls of the newly formed vessels would yield to the pressure of the blood stream. Hæmorrhage would occur, a fresh clot would form, only to disappear after an interval of a few hours. Meantime new fibers were forming between the periphery of the clot (or successive clots), and the inner border of the wound, so that the area of the wound was constantly growing smaller.

*Thirdly*—The constant and progressive dilatation of the larger vessels — especially the veins — in the immediate vicinity of the wound, was much greater than I anticipated. Some of the veins appeared like enormous channels or sinuses, excavated in the tissues, rather than actual vessels, with their proper tunics; and this condition of things remained for many days after the termination of the experiment.

The question as to the origin of the newly-formed fibers of the cicatrix came up, but I confess my inability to give a satisfactory answer.

Three sources are possible: 1st, they may be the product of the differentiation of the extravasated fibrine, or rather fibrine producing materials; 2d, they may be derived from the leucocytes, or from the progeny of the leucocytes; or 3d, they may be the result of the proliferation of the connective tissue corpuscles, situated in or upon the borders of the wound.

The discussion of this question, which is one of great pathological interest, would form a respectable paper of itself. As to the real facts, I am not yet prepared to express any decided opinions. If future experiments shall prove any more satisfactory, the result will be at the service of the Society.

---

## SUBPERITONEAL FIBROID TUMOR OF THE UTERUS, REMOVED THROUGH AN INCISION IN THE POSTERIOR WALL OF THE VAGINA.

By R. STANSBURY SUTTON, A.M., M.D., of Alleghany, Pa.

Until February, 1870,[1] the history of surgery furnishes no instance in which a tumor growing within the peritoneal cavity was removed through the posterior wall of the vagina. The honor of having first suggested and performed the operation belongs to Dr. T. Gaillard Thomas, Professor of Obstetrics and Diseases of Women, in the College of Physicians and Surgeons, of New York. This case was one of Ovarian Tumor "the size of a large orange." The patient recovered.

In 1872,[2] Dr. R. Davis, of Wilkesbarre, Pa., removed by this route, an Ovarian Tumor, weighing 9 lbs. This patient recovered.

[1] Amer. Jour. Med. Sciences, April, 1870; also, Peaslee on Ovarian Tumors, p. 319.

[2] Trans. State Med. Soc. of Pa., 1874; also, Half Yearly Compend Med. Science, Jan. 1876.

[3] New Orleans Med. and Surg. Journal, Nov. 1873.

[4] Amer. Jour. Med. Sciences, July, 1876.

In 1873,[3] Dr. S. T. Gilmore, of Mobile, Alabama, had a successful case.

In 1874,[4] Dr. Robert Battey, of Atlanta, Ga., had a successful case.

Until the present year, four American Surgeons had successfully removed Ovarian Tumors *per vaginam*, and in no instance had the operation been followed by symptoms unusually severe. I have failed to find any record of the removal of subperitoneal fibroids by this method; and so far as my knowledge extends, I do not know that the operation has ever been attempted, excepting by myself in the following case. I take the case from my note book.

June 19, 1876. Emma G——, a black woman, was admitted to my ward to-day, after my visit had been made.

June 20. She is fifty years of age, her skin is hot and dry, temperature 103°, tongue furred, edges red, has considerable tenderness over the abdomen, especially in the right iliac region. Her bowels have not been moved for more than a week, and she complains of a pain down the entire length of the right sciatic nerve and its terminal branches. Says she has a tumor in the pelvis. Ordered a sponge bath of tepid water, to be repeated occasionally, and a mixture of solution of citrate of magnesia, fluid extract of senna, and syrup of ginger, to be given immediately.

June 21. Temperature normal, tongue cleaning, the bowels have been moved freely, less abdominal tenderness exists.

An examination *per vagniam* reveals a large, solid tumor, ovoidal in shape, filling the right half of the pelvic cavity, and pushing the uterus firmly to the left lateral wall. The pressure of the finger against the tumor elicits pain, and the surface of the tumor is rough and as hard as bone. The sound enters the uterus just two and one-half inches. The uterus can be moved but the tumor cannot. With the sound in the right hand and the index finger of the left pushed hard in between the uterus and tumor, a connecting band betwen the uterus and tumor is discernable, beginning just above the vaginal attachment. The tumor pushes the posterior and right lateral vaginal walls downward and forward. A finger in the

rectum finds the growth pressing upon the canal, and pressure elicits pain but no motion in the growth. She was now placed upon her knees with the chest resting upon the bed. A prolonged and severe effort by pressure with two fingers in the vagina, failed to more than barely move the tumor, and it was impossible to dislodge it from the pelvic cavity. Pressure with the left hand above Poupart's ligament in the right iliac region detects the growth.

*Diagnosis.* A subperitoneal fibroid tumor of the uterus, which is pediculated, and which has undergone cretaceous degeneration; which process has produced these inflammations, resulting in adhesions short and strong. This diagnosis was strengthened by the fact that she gave evidence of having had several attacks of fever, attended with severe pain in the lower part of the abdomen. These attacks in nearly every instance followed the effort necessary to do a day's washing. She sustained herself as a domestic, but latterly found all exercise painful. Ordered 2½ grs. quiniæ sulphat. and ʒj elix. bismuthi after each meal. Good diet, sponge bath daily.

June 23. Ordered sol. magnesiæ citrat. with ext. sennæ. Operated satisfactorily.

June 24. I called the entire staff together to-day for consultation. By invitation, Dr. A. M. Pollock was present with us. The patient is feeling moderately comfortable, has no fever, tongue clear, skin moist, pulse rapid, nervous.

The diagnosis at which I had arrived was stated, and the patient being now under the influence of ether, Dr. Pollock was invited to examine the case. He introduced his hand into rectum and with considerable effort was able to get some movement in the growth, but found it impossible to dislodge it from the pelvis, after pursuing his examination to the end, the various members of the staff examined the case as carefully as possible without again introducing the hand into rectum. The ether was withdrawn, the patient left with the nurse, and we retired for consultation.

No opinion was offered by any of the staff—Dr. Pollock expressed himself as not entirely satisfied that the growth was a fibroid or connected with the uterus, that it was hard enough

to be an exostosis. In reply to his question as to whether I was entirely satisfied, I replied that I was. We then passed on to the question of treatment. It was the opinion of all that medical treatment was in this case of no avail, and that an effort to remove it by an operation was of questionable propriety. To abandon the woman to her condition was to leave her to constant suffering and to the charity of the public for sustenance. She rebelled against this, preferring to die from an operation, rather than be abandoned thus. In view of all the facts, we decided to make an effort to remove the tumor, and as the operation devolved upon me, I was left to select the method.

June 25th, 11:30 A. M. After the examination yesterday, a full dose of opium was administered, and at 9 A. M. this morning 25 gtts. tinct. opii, were given by the mouth. The patient slept well last night and is in very fair condition this morning. The patient was placed upon the table on her left side in Sim's position, the bladder emptied with a catheter. Drs. McCoy and C. C. Lange took charge of the anæsthetic (Squibb's ether). Sims' speculum was now introduced and held by Dr. Pollock, while the limbs were guarded by the left hand and the right side of the nates elevated by the right hand of Dr. Purviance, who stood opposite to Dr. Pollock. In addition to the gentlemen mentioned there were present Drs. Estep and Gieseking of this city, and Dr. Hugh L. Guthrie of Sparta, Illinois. All being ready I proceeded to operate as follows:

The posterior wall of the vagina was seized about midway between the rectum and cervix uteri, with a tenaculum and cut through with one stroke of the scissors; with a probe pointed bistoury and the aid of a tenaculum, this incision was extended as far as possible toward the rectum and toward the cervix. All bleeding being arrested by sponging with cold water, the peritoneum was picked up with Sim's small tenaculum and cut through with the scissors. This incision was now made of the same length as the former, with the probe pointed bistoury. The finger was now readily brought in contact with the tumor. An effort made to enucleate the growth in its position failed. The hand, first dipped in car-

bolized water, was carried into the cavity of the pelvis, the tumor grasped and all its adhesions forcibly broken up. It was found to be attached by a fleshy pedicle to the posterior wall of the uterus. When the hand was withdrawn, the small intestines followed into the vagina. These were carefully pushed back with the hand, which was again carried up to the growth. A pair of strong vulsellum forceps were carried closed along the front of the wrist and palm of the hand and carefully expanded over the tumor, which was now seized and drawn into the vagina, the index finger of the left hand working back over the growth as much as possible the lips of the vaginal wound. The speculum was again introduced, and the exposed capsule incised as far as it could be reached and with the aid of a pair of dressing forceps, a tenaculum handle, and the finger nail, it was stripped back beyond the equator of the growth on all sides. The tumor now occupied the vagina and a second pair of forceps being fastened upon its stripped surface, the first pair were carefully removed. A pair of guarded hooks were also fastened into it and by these with Dr. Pollock's assistance, we pulled the tumor through the external outlet of the pelvis. Dr. Guthrie supporting the perineum with one hand and stripping back the capsule with the thumb nail of the other, as the tumor came out. Two vessels in the pedicle required ligation. The pedicle with some folds of small intestine in the vagina were now pushed back into the abdominal cavity. No stitches were applied in the vaginal wound. The patient had been forty minutes under the anæsthetic of which eight fluid ounces had been consumed.

The patient was now put to bed, pulse one hundred and twenty. Ordered $\frac{1}{8}$ gr. morphiæ sulph. every three hours, oftener if required.

4 P. M. Catheter used — to be used every six hours.

7:45 P. M. Pulse one hundred and thirty, skin hot, no pain. Continue $\frac{1}{8}$ gr. doses of morphia as required, and give five drops of tincture of verat. virid. every three hours. To have milk *ad libitum*.

June 26th, 9 A. M. Patient has slept some, pulse one hundred and eighteen, temperature 102°, slight nausea. Dis-

continue veratrum, give ten grs. quinine every three hours, continue morphia. The tubes of a stomach pump was carefully passed just beyond the vagina, and a quart of slightly carbolized warm water discharged through it, this returned at first cloudy then clear.

3 P. M. Pulse one hundred and fifty four, temperature $104\frac{9}{10}°$, great tympany, complains of pain.

5:45 P. M. Pulse one hundred and forty-eight, temperature 104°, tongue coated and dry. Repeated the douche. Pulse fell four beats, and temperature $\frac{1}{10}$ of one degree — continue quinine and morphia. To have ten drops of veratrum.

9 P. M. Pulse one hundred and thirty-six, temperature 101°. Pulse easily compressed, vomited at 7 P. M.

9:45. Passing gas off by the bowel.

June 27th, 9:15 A. M. Pulse one hundred and twelve, temperature $98\frac{1}{2}°$, tongue moist. Used the douche again and let the gas off the lower bowel with a tube passed into the rectum.

10:45 A. M. Patient sleeping, legs stretched out, seems comfortable, pulse one hundred and eight.

June 28th, 10 A. M. Has been restless for several hours, pulse one hundred and twenty, temperature 101°, complains of pain, has had no morphia all night. Had some discharge from bowels, morphia to be resumed.

12 M. Temperature 103°, pulse one hundred and thirty.

3 P. M. Temperature $104\frac{1}{5}°$, pulse one hundred and forty, tympany great, cerebral excitement.

9 P. M. Temperature not taken, pulse one hundred and sixty.

June 29th, 9 A. M. Patient died this morning.

*Post Mortem.* Present Drs. Sutton, Pollock and C. C. Lange.

A careful investigation revealed a wound of the small intestine, which had been made with a prong of the vulsellum during the operation. This wound was only discovered by making pressure along the intestines and finding that gas escaped at what was a mere pin hole, leading down from which was the line of a little rent which was so completely glued as to

require some effort to separate the edges. At what stage in the operation this occurred I do not know. The danger was appreciated and careful attention given to avoid it. Doubtless the escape of gas was one cause of the peritonitis which carried her off.

No comment, probably, is necessary on this case, but I cannot resist giving expression to the impression it has left upon my mind. *First*, that fibroid or solid tumors are extremely difficult to remove by this method, and *second*, that all operations for the removal of tumors from the cavity of the peritoneum are more easily and safely performed through the linea alba.

---

## A CASE OF CLONIC CONVULSIONS.

REPORTED BY DR. C. A. ROOD, MONROE, WIS.

I was summoned in haste at 3 A. M., Monday, May 8th, to see Mr. H. E., aged twenty-one years, of a nervous temperament, suffering from convulsions. Upon arriving, found the young man sitting in an arm chair, unconscious, having clonic spasms of the entire body — most marked in the muscles of the back — so severe as to require three men to hold him and prevent his injuring himself and those about him.

I had him removed at once to the bed, and placed in the recumbent posture, when I began administering chloroform by inhalation, which soon quieted and brought him under control.

Upon inquiry found that he had attended a Sabbath School Concert the evening previous, from which he returned feeling perfectly well. Before retiring, he ate quite a hearty meal which seemed to distress him considerably, as he was restless and unable to sleep soundly. At 2 A. M., he arose and went down stairs to procure a drink of water, stating to his companion that he felt sick at his stomach. While down stairs he was attacked with spasms which he continued having for a half hour after my arrival.

From the history ascertained, I concluded that the hearty meal taken just before retiring was the exciting cause; consequently I administered an emetic which I was obliged to repeat before procuring the desired effect. The second dose being effectual, caused him to eject quite a quantity of undigested meat, etc., etc. This seemed to ease him completely, as he soon returned to consciousness, the spasms ceasing, and leaving him perfectly rational.

8 A. M. Found him feeling well, pulse natural, has slept some since my previous visit.

5 P. M. Patient sitting up, slept considerably during the day and is gaining rapidly. Thinking all would go well and that simply a good night's rest was all that was required, I left some Dover's powder to be taken at bed time, providing he did not rest well. To my surprise, I was summoned in haste at 7 P. M., of the same evening. The patient was again in spasms.

I was soon at his side administering chloroform. The spasms were not so severe as those of the morning previous and they succumbed more readily to the influence of chloroform. I commenced giving fifteen grain doses of bromide of potassium every two hours. The pulse during as well as intervening the spasms, was at that time natural. At 9 P. M., he had another spasm; at 11:30 P. M., another, and at 4 A. M., May 9th, still another. I now began giving, alternately with the bromide, seven and one-half grain doses of hydrate of chloral.

He seemed now to rest well, complaining of nothing except a soreness in the muscles from excessive straining. At 12:30 P. M., he had another spasm. I commenced giving two grains of assafœtida every hour, in lieu of the bromide, continuing the chloral.

The following night, *i. e.*, May 9th, he had three of these spells, regularly at the stated hours of the night previous. After the third one, which was at 11:30 P. M., his pulse was slow and full, and he was more drowsy. I now bled him some ℥ viij, and commenced giving quiniæ sulphatis. grs. ij, every hour during the day, alternating with the assafœtida,

thinking he might be malarious, as the spasms seemed to assume a periodical type, gave the chloral p. r. n.

No more spasms occurred until 11 P. M., May 10th, at which time they were very light. Pulse slow and full, patient drowsy. I again bled him some two ounces more than upon the previous night, which rapidly improved the symptoms quite perceptibly.

May 11th. Patient feeling quite well, sitting up most of the time. Appetite good, says he cannot eat enough.

Friday, May 12th. Patient up about the house and yard, in the afternoon about town.

Saturday, May 13th. He has left town to take a few days of rest and country air.

---

## THE MORTALITY OF SURGICAL OPERATIONS IN THE UPPER LAKE STATES, COMPARED WITH THAT OF OTHER REGIONS.

By EDMUND ANDREWS, A.M., M.D.,

Professor of Principles and Practice of Surgery in Chicago Medical College,

Assisted by Thos. B. Lacey, M.D.,

Assistant Surgeon in the National Soldiers' Home.

(Continued.)

### EXCISIONS OF THE WRIST JOINT.

I have occasionally performed this operation, but have preserved no records of the cases, nor obtained any from other Lake State surgeons.

Abroad the statistics are very meager, and of doubtful value.

I have gleaned from various works three hundred and five cases, with fifty-seven deaths, which is a mortality of nineteen per cent. Many of the cases were only partial, leaving the complex articulations of the remaining bones to suppurate and breed pyæmia in very unfavorable circumstances. It appears to me that complete resections would be far safer. The

utter poverty of the literature on this subject compels us to lay it aside as not yet properly investigated.

Probably a complete resection would be advisable whenever it offers a fair opportunity to save a hand, whose innervation and circulation is in fair condition.

### RESECTIONS AT THE HIP JOINT.

Of these I have nineteen cases from the Lake States, with eight deaths, which is a mortality of forty-two per cent. They were all cases of caries of the joint. The literature of the profession furnishes us the following figures for other regions:

TRAUMATIC PRIMARY RESECTIONS OF THE HIP ABROAD.

| AUTHORITY. | CASES. | DIED. |
|---|---|---|
| Circular No. 2, S. G. O., p. 137, collected by Otis | 39 | 36 |

Mortality, 92 per cent.

TRAUMATIC INTERMEDIARY RESECTIONS OF THE HIP ABROAD.

| AUTHORITY. | CASES. | DIED. |
|---|---|---|
| Circular No. 2, S. G. O., p. 137, collected by Otis | 33 | 30 |

Mortality, 91 per cent.

PURELY SECONDARY RESECTIONS OF THE HIP ABROAD.

| AUTHORITY. | CASES. | DIED. |
|---|---|---|
| Circular No. 6, S. G. O., p. 137 | 13 | 11 |

Mortality, 85 per cent.

COMBINED INTERMEDIARY AND SECONDARY RESECTIONS OF THE HIP ABROAD.

| AUTHORITIES, | CASES. | DIED. |
|---|---|---|
| Warren, American Confed. Army | 1 | 0 |
| Chisholm, " " " | 2 | 1 |
| Billroth's Briefe | 2 | 2 |
| Deutsch. Zeit. f. Chir. Bd. I., S. 187 | 1 | 1 |
| Archiv. Klin. Chir., B. 13, S. 575 | 1 | 1 |
| Totals | 7 | 5 |

Mortality, 71 per cent.

Extensive statistics have been gathered on the Pathological Resections of the Hip Joint, by Hodges, Ashurst, R. Good, Heyfelder, Sayre, Fock, Leisrink and H. Lyster. These have been carefully collated by Ashurst, in the Pennsylvania Hospital Report, 1869, and in his Surgery, 1871. Gant, in his Surgery, published the same year, gives a collection of late cases from British hospitals, which appear to be mostly or entirely additional to those collated by Ashurst. Tho two collections taken together give a tolerable summary of what is known on the subject, and are here subjoined:

PATHOLOGICAL RESECTIONS OF THE HIP JOINT ABROAD.

| AUTHORITIES. | CASES. | DIED. |
|---|---|---|
| Ashurst's Surgery, p. 605; terminated cases | 327 | 163 |
| Gant's " p. 638; " " | 79 | 22 |
| Totals | 406 | 185 |

Mortality, 46 per cent.

The cases of Sayre and other American surgeons are included in Ashurst's collection, with many from Germany, France, etc. Gant's cases are all British, and show decidedly better results than Ashurst's figures, which are gathered from all nations. The French and German cases especially are very fatal.

GENERAL SUMMARY.

| | LAKE STATES. | | | ABROAD. | | |
|---|---|---|---|---|---|---|
| | CASE | DIED | PER CT. MORT | CASE | DIED | PER CT. MORT |
| Primary | .... | .... | .... | 39 | 36 | 92 |
| Intermediary | .... | .... | .... | 33 | 30 | 91 |
| Purely secondary | .... | .... | .... | 13 | 11 | 85 |
| Combined intermediary and secondary | .... | .... | .... | 7 | 5 | 71 |
| Pathological | 19 | 8 | 42 | 406 | 185 | 46 |

It appears, therefore, that in the Lake States we have no recorded experience of traumatic cases, but in pathological ones our results are somewhat better than the average given in surgical literature, and immensely better than in France, where Leisrink gives a mortality of eighty-six per cent. The

seventy-nine late cases from British hospitals, however, give only twenty-eight per cent., which is better than the Lake States by eighteen per cent.

### OPINIONS OF AUTHORS.

Only a few years ago excisions of the hip joint for disease were generally condemned, but of late this opinion has been reversed.

Ashurst, (Penn. Hosp. Rept., 1869,) thinks it a serious operation, only to be undertaken when there is no reasonable prospect of recovery without it. He concludes:

1. That the sex of the patient is immaterial.

2. That the age is important, the success before puberty being much greater than after.

3. That total excisions are as successful as partial.

4. That in fatal cases only one-fourth of the deaths are due to the operation.

5. That in gunshot wounds (p. 211, Ashurst's Surgery,) fracturing the joint, excision, though very fatal, is the safest course.

Gant's Surgery, p. 632, claims that destruction of the articular cartilages of the hip without anchylosis always justifies the excision, (Mr. Hancock advocates the same practice,) but that the operation should not be performed for mere anchylosis. Mr. Gant says that disease of the acetabulum does not prohibit the operation, but that the effect of spontaneous dislocation is rather to be reckoned as opposed to excision. For gunshot fractures of the joint he seems to favor the excision, as being excessively fatal, yet about the only hope left the patient.

Prof. Sayre, of New York, says (*Orthopedic Surgery*, page 284), that in hip disease, with vitiated constitution and bones diseased beyond the operator's reach, the patient is probably hopeless; but when the disease is chiefly local, the constitution not undermined, the bones not affected beyond the possiblity of removal, and the circumstances of air, food, etc., favorable, the operation offers the best possible chances of recovery.

Holmes, of England, in direct contradiction to Sayre, thinks

that the poor patients, located in bad air and under bad nursing, are the ones that ought to be operated on to relieve them, as quickly as possible, from the irritating diseased bone, while patients in good circumstances will have a better chance without operation.

Hamilton favors the operation in a suitable selection of carious cases, but doubts its applicability to gunshot wounds.

Gross, Erichsen, Druitt, Bryant, Holmes and Johnstone favor it in a proper selection of cases of hip disease.

Dr. J. S. Sherman, late Professor of Orthopedic Surgery and Diseases of the Joints in Chicago Medical College, says that in determining the question of excision for hip disease, "the general condition of the patient should be considered as much as the condition of the joint itself. Cases in which the general condition is bad, and which do not yield readily to treatment, should be operated on early, independent of the amount of caries; but where the general condition is good, and endurance can be expected, the operation should be postponed. The majority of such cases recover excellently without operation. Hence, it is justifiable to give them a chance and not exsect early, but if exhaustion occurs exsection is necessary."

Surgeon Otis, of the U. S. Army (Circular No. 2, S. G. O. P. 123), after the most elaborate view ever made of the subject of gunshot wounds of the hip, says:

"Primary excisions of the head and upper extremity of the femur should be performed in all uncomplicated cases of gunshot fractures of the head or neck. Intermediate excisions are indicated if the diagnosis is not made out till late, and also in gunshot fracture of the trochanter with consecutive arthritis. Secondary excisions are demanded by caries or secondary involvement of the joint from fractures or wounds in the immediate vicinity."

"Expectant treatment is to be condemned in all cases in which direct injury to the articulation can be clearly established."

Hamilton, as we have already mentioned, doubts the soundness of Otis' conclusion.

CONCLUSIONS.

In caries of the hip joint, below the age of puberty, excision is not a very dangerous operation; and, although the mortality is from twenty-five to forty per cent., yet only one-twelfth of the deaths are due to the operation. Almost always the patient is relieved, and if he dies it is in spite of the operation. Above the age of puberty the danger of the operation is much greater, and the majority of the patients die.

If this excision is contemplated, therefore, in a child approaching the age of puberty, it should be done as early as possible, and after that age should not be done at all if it can be avoided.

Formerly excision of the hip for caries was generally condemned, but some twenty years ago the old prohibitions were broken over, and numerous cases were operated on. As experience accumulated, however, it was found that though the operation rarely killed the patient, yet the wounds were very slow in healing, so that in many instances those that were not operated on recovered fully as early as those subjected to excision. This damped the ardor of the operators somewhat, and at the present time we seem to be forced to about the following conclusions:

1. Cases of morbus coxarius which do not suppurate, of course do not suggest any operation.

2. Suppurative cases, which do well under tonics, antiseptic injections, etc., should have a full and prolonged trial of expectant treatment, and only be operated on if their progress seems to be obstinately slow.

3. Cases below puberty, which gradually get worse, the fistulas refusing to heal, and the patient steadily losing ground, should be operated on reasonably early, without waiting for extreme exhaustion.

4. Cases above puberty may be operated on if no other hope exists, but not until the minor operation of opening the joint and using antiseptic injections and dressings has been thoroughly tried on Lister's plan.

5. Sex exerts little influence on the results.

6. Disease of the ilium, to a moderate extent, is no obstacle to excision.

7. When spontaneous luxation occurs it usually relieves the patient of a great irritation, and favors spontaneous recovery, but if otherwise it constitutes no objection to excision.

8. The great majority of cases of suppurating hip disease will recover without operation.

9. In uncomplicated gunshot fractures of the hip joint, the present state of science indicates that excision should be performed as soon as possible, yet nine-tenth of the patients are reported as dying; and if all the cases were known, which the chagrin of the surgeons caused them to suppress, the mortality would show still worse. It is greatly to be desired that more light should be had on this terrible subject. Surgeon Otis could scarcely find a single clear case of recovery from gunshot fracture of the hip without operation (Cir. No. 2, p. 121), yet the depth of the parts caused the diagnosis to be very doubtful in many cases; and we may well stagger at an operation whose deaths are an unknown quantity, ranging somewhere between ninety and one hundred per cent. of the whole.

Perhaps the antiseptic plan would give better results.

## RESECTIONS OF THE KNEE JOINT.

This operation has received little favor in the Lake States. I have records of only eight cases, of which three died. All the eight cases were pathological.

In other regions we have the following list. (The numbers being too few, and the records too imperfect, the traumatic cases cannot be classified into primary, intermediary and secondary. They are all for gunshot wounds and display a fearful mortality):

TRAUMATIC RESECTIONS OF THE KNEE JOINT, ABROAD.

| AUTHORITIES. | CASES. | DIED. |
|---|---|---|
| Circular No. 6, American Cases | 10 | 8 |
| " No. 6, Foreign " | 12 | 11 |
| Chisholm, Confederate Army, United States | 4 | 3 |
| Warren " " " " | 1 | 0 |
| Billroth, Arch. klin. Chir. B. X. und Briefe | 2 | 2 |
| Billroth's Briefe, p. 267 | 20 | 17 |
| Geissel, German-French War | 3 | 3 |
| Herrgolt, " " | 1 | 1 |
| Totals | 53 | 45 |

Mortality, 85 per cent.

PATHOLOGICAL RESECTIONS OF THE KNEE JOINT, ABROAD

| AUTHORITIES. | CASES. | DIED. |
|---|---|---|
| Boston City Hospt. Rept. | 6 | 1 |
| Cases Collected by Dr. R. Hodges, Boston | 208 | 60 |
| " " " M. L. Peniere, 1762 to 1869 | 431 | 131 |
| " " " Gant from British Hosps. Gants' Surgery p. 621 | 241 | 64 |
| Sundry German Operators | 15 | 9 |
| Totals | 901 | 265 |

Mortality, 29 per cent.

Some of these figures of different authors include, partly, the same cases as others, and their analysis does not enable me to separate them completely; but as the repetitions affect both columns alike, they do not materially change the ratio of mortality.

GENERAL SUMMARY OF RESECTIONS OF THE KNEE.

| | CASES. | DIED. | PER CT. MORT. |
|---|---|---|---|
| Lake States, Pathological | 8 | 3 | 37 |
| Traumatic, Abroad | 53 | 45 | 85 |
| Pathological, " | 901 | 265 | 29 |

It appears, therefore, that, contrary to our experience in amputations, pathological resections of the knee have been less successful here than abroad. However, the number of our cases is so small that this may be an accidental occurrence.

OPINIONS OF AUTHORS.

Hodges shows that excision of the knee has a higher mortality than amputation above it, and that out of 208 case 102 failed or died.

Bryant, of London, shows that of 431 cases of disease of the knee which were amputated, the mortality was only twenty-two per cent., while of 178 similar cases resected, thirty-nine per cent. died. After a careful reivew of the subject, he opposes the operation.

T. Holmes speaks discouragingly of the operation, but allows that it may, perhaps, be done in chronic disease of the knee, in patients below the middle age.

Gant favors excision cautiously in caries, provided the disease does not occupy too much of the bones. He endeavors to show that the mortality of excision of the knee is no greater than that of amputation of the thigh, and consequently preferable, because it saves the limb with no greater risk than is incurred in amputation. In this argument he commits the singular error of comparing the mortality of the excision with that of amputation of all parts of the thigh, high and low, alike. Now, the choice lies only between excision and amputation at the lower third of the thigh, where the mortality of amputation is much less than that of excision.

Pirogoff disapproves the operation in war surgery.

Hamilton discourages the operation, especially in gunshot wounds.

McLeod and Longmore oppose it in military practice.

Ashurst opposes it in gunshot cases, but allows it in disease. He says it is not very successful below five years of age, and very fatal in persons past the prime of life; but the safest period is from five years to puberty. Recent cases of disease should generally not be operated on; but only those which have either actually proceeded to caries and suppuration, or else show the characters of gelatinous arthritis (white swelling of old writers), in the doughy, semi-elastic swelling. In a suitable selection of such cases he recommends excision, but in those who are too old, or too young, or who have vis-

ceral complications, or too extensive disease of the bone to leave a useful limb after its excision, or who cannot afford the long time of recovery which excision requires, amputation is to be preferred. (*Med. Record*, Vol. 2, p. 443.)

Erichsen allows it doubtfully in extensive disease or faulty anchylosis.

Sir Geo. Ballingall favored it in civil, but opposed it in military practice.

Guthrie favored it in military practice, provided all the circumstances were favorable.

Gross approves it for disease, if the latter is not too extensive.

Butcher, Swain, Ferguson and P. H. Watson approve it strongly, and Druitt says it is one of the greatest triumphs of modern surgery.

CONCLUSIONS.

The above opinions are contradictory enough to satisfy the genius of discord. In such a confusion of precepts of the masters, we must appeal to the facts, which give us the following results:

| | PER CENT. |
|---|---|
| Mortality of Traumatic Amputations of the Lower Third of the Thigh, Abroad | 45 to 60 |
| Mortality of the Traumatic Excisions of the Knee Joint, Abroad | 85 |
| Mortality of Pathological Amputation of Lower Third of Thigh, Abroad | 20 |
| Mortality of Pathological Excision of the Knee, Abroad | 29 |

The figures of the Lake States, so far as they go, confirm the showing of a much greater mortality for the excision than for the amputation.

Eighty-five per cent. is a terrible death rate, and is sufficient to condemn the traumatic excision to final oblivion. The pathological excisions are only nine per cent. worse than the amputations, and this difference is not so great but it may be properly overruled in some cases where the importance of saving a natural limb is very great. The drawbacks, however, must be considered, and they are these:

1. Owing to the inflamed condition of the bones the time of healing is often ten or fifteen months.

2. There is always considerable doubt about such an anchylosis of the bones as will enable the patient to step on the limb.

3. A large per centage of cases fail so completely as to necessitate a subsequent amputation.

4. In children, if the operator removes the entire epiphysis of the femur, the growth of the limb in length is, in a great measure, arrested.

A candid consideration of all these facts renders it impossible for the conscientious surgeon to recommend excision of the knee joint in more than a very few unusual cases.

The eight pathological excisions of the knee in the Lake States are too small a number to yield any special conclusions, yet the three deaths in the eight cases are a dismal recommendation when compared with our twenty-two pathological amputations of the lower third of the thigh, without a single death.

## RESECTIONS OF THE ANKLE JOINT.

Of these the Lake States furnish us nine cases with one death, which is eleven per cent.

Abroad the literature is scanty, so that the subdivision of traumatic cases is impossible. Taken together they are as follows:

TRAUMATIC RESECTIONS OF THE ANKLE, ABROAD.

| AUTHORITIES. | CASES. | DIED. |
|---|---|---|
| Deutsch. Zeit. B. V., S. 26 | 1 | 0 |
| " " B. I., S. 187 | 2 | 2 |
| " " B. II., S. 106 | 5 | 3 |
| Stromeyer, Battle of Langensalza | 1 | 0 |
| Heyfelder, Resectionen, p. 162 | 67 | 6 |
| Circular No. 6, S. G. O. | 18 | 6 |
| Jaeger's Tables | 29 | 1 |
| Sir Astley Cooper | 9 | 0 |
| Josse | 6 | 0 |
| Taylor | 5 | 0 |
| Gants' Collection | 4 | 1 |
| Totals | 147 | 19 |

Mortality, 13 per cent.

PATHOLOGICAL RESECTIONS OF THE ANKLE, ABROAD.

| AUTHORITIES. | CASES. | DIED. |
|---|---|---|
| Hancock's Collection of British Cases | 34 | 2 |
| Heyfelder's Collection, deducting British Cases, Resectionen, p. 162 | 25 | 3 |
| Archiv. klin. Chir. B. 8 und 10 | 10 | 3 |
| Deutsch Zeit. B. II., S. 380, Lücke | 3 | 1 |
| Totals | 72 | 9 |

Mortality, 12 per cent.

OPINIONS OF AUTHORS.

Hueter thinks resection of the ankle is indicated in suppurative inflammation of the joint.

Langenbeck had a "run of bad luck" with it, all his eight cases performed for caries being failures; however, he recommends it for many cases of gunshot wounds. He and the German surgeons generally favor the sub-periosteal method.

Mayer opposes partial resections, but A. Rose and Frank Hamilton favor them when circumstances demand.

Ashurst, p. 612, brings statistics to show that excision of the external malleolus has the same mortality as that of the entire ankle, viz.: twenty per cent.

Pirogoff believes resection of the ankle to be safer than amputation in compound fractures, and that the risk of conservative treatment is intermediate between the two.

Kade disapproves the operation in most cases.

Gant, p. 644, favors the operation for disease, provided the affected portions of the bones do not extend too far from the joint. In gunshot wounds of the ankle, he generally prefers excision to amputation, p. 289.

Ashurst, pp. 211 and 612, favors both traumatic and pathological excisions.

Holmes, in the first edition of his System of Surgery, opposed the operation, but in the second edition retracts his opinion, and cautiously favors excision.

Gross advocates it where the caries is not too extensive.

Erichsen and Druitt both oppose it.

CONCLUSIONS.

As compared with amputation of the leg in the lower third, excision of the ankle is much the safest.

The following figures show the difference:

| | Mort. of Exc. of Ankle, Abroad. | Mort. of Amp. of lower 3d of Leg, Abroad. |
|---|---|---|
| Traumatic | 13 per cent. | 33 per cent. |
| Pathological | 12 " | 16 " |

In the Lake States the operation has proved a little safer than abroad, viz.:

Average Mortality of all Excisions of Ankle, Abroad.....12½ per ct.
" " " " " Lake States....11 "

As between excision and amputation there is only one conclusion possible. Excision is far the safest, and also preserves a useful foot for walking. It is therefore to be preferred to amputation whenever the choice is possible; that is, when the foot is not mortified, nor the parts above and below the joint too much diseased or disorganized to allow their serving a future useful purpose. It is here to be remembered that Lister's antiseptic treatment has revolutionized some of our precepts. I have, by this method, healed an ankle proved by the probe to be completely carious, though I am sure that one could not always succeed in that way. It would be well in many cases to give it a trial before proceeding to excision. In the same antiseptic way, many compound dislocations and fractures of the joint can be readily cured without operation.

On the whole the following statement probably gives pretty nearly the truth:

CASES FOR AMPUTATION.

1. Death of the foot from any cause.

2. Cancer or incurable disease of the foot, rendering its presence pernicious.

3. Caries and necrosis, so destroying the parts above and below the joint as to render it impossible to remove the

disease and have the end of the tibia rest on the foot, or to preserve periosteum enough to reproduce the bones.

4. Compound fractures effecting similar destruction of parts.

CASES FOR EXCISION.

1. All ordinary cases of caries, which resist antiseptic treatment.

2. Certain cases of talipes, and displacement from old accidents, which resist orthopedic treatment.

3. Compound fractures and dislocations which have resisted antiseptic measures, and have not destroyed the circulation in the foot.

4. Dislocations of the astragalus, and compound dislocation of the tibia forward which will not remain in position after being reduced.

CASES FOR ANTISEPTIC TREATMENT.

1. Caries in its earlier suppurative period.

2. Simple suppuration of the joint.

3. Compound fractures and dislocations which will stay reduced, which have not destroyed the circulation in the foot, nor hopelessly disorganized too much of the adjacent parts.

OPERATIONS UPON THE LARNYX AND TRACHEA.

Of these I have obtained trustworthy records of thirty-five cases, some of which are of decided interest:

# TABLE XIII.

## Operations on the Larynx and Trachea.

| No. Andrew's Sur. Rec | Operator. | Age. | Reason for operation. | Complications. | Operation. | Cond. at opr | Time to operation. | Result. | Time to death or recovery | Practice. |
|---|---|---|---|---|---|---|---|---|---|---|
| ..... | Dr. H. A. Johnson | 2 | Memb. croup | None | Trache. abv. thyroid gld. | Bad | 3 days | Died | 1 hour | Private |
| ..... | " " " | 6 | Diphtheria | None | Laryngotomy | " | 4 or 5 days. | " | 1 " | " |
| ..... | " " " | 4 | Memb. croup | None | " | " | | " | | Hospital. |
| 116 | " E. Andrews | 1 | Diphtheria | None | " | " | | " | 6 weeks | Private |
| 138 | " H. A. Johnson | 1 | " | None | " | " | | " | 24 hours | " |
| 674 | " E. Andrews | 12 | Oedema glotidis | None | " | Good | | Recover'd | | " |
| 7593 | " " " | 2 | Foreign body in trachea | None | Trache. below thyroid. | " | 1 or 2 days. | " | | " |
| 7592 | " " " | | " " " | None | " " | Bad | some hours | Died | 1 hour | " |
| 7594 | " " " | 3 | " " " | None | " in haste | " | " | " | 10 min. | " |
| 7595 | " H. A. Johnson | 7 | Diphtheria | None | " above thyroid | Med. | | " | 4 days | " |
| 7598 | " E. Andrews | 7 | " | None | Laryngotomy | Bad | | " | 3 " | " |
| 7599 | " " " | 3 | " | None | " | " | | " | 3 " | " |
| 8003 | " " " | 40 | Stricture of glottis with asphyxia. | Phthisis | Trache. above thyroid. | " | | Successful | | Hospital. |
| ..... | " Herrick | 4 | Oedema " | None | " | ..... | | Recover'd | | ..... |
| ..... | " D. Brainard | 1 | Abscess at root of tongue | None | " | ..... | | " | | ..... |
| ..... | " " " | 2 | Foreign body in trachea 3 months | ..... | " | ..... | | " | | ..... |
| ..... | " H. A. Johnson | 3 | Diphtheria | None | " above thyroid. | Bad | 4 days | ..... | | Private |
| ..... | " " " | 3 | Memb. croup | None | " " | " | 1 " | Died | 24 hours | " |
| ..... | " H. Wardner | 1 | " | None | " | " | 8 " | " | 5 " | " |
| ..... | " " " | 1 | " | None | " | " | 6 " | Recover'd | 120 " | " |
| ..... | " " " | 3 | " | None | " | " | 7 " | Died | 12 " | " |
| ..... | " H. A. Johnson | 2 | " | None | " above thyroid. | " | 48 hours | " | 10 " | " |
| ..... | " E. Powell | 30 | Oedema of larynx | Oedema of lungs | Laryngo-tracheotomy | " | 16 days | " | 26 " | Hospital. |
| ..... | " J. W. Freer | | Foreign body in larynx | None | Trache. below thyroid. | " | 2 weeks | Recover'd | 14 days | " |
| ..... | " J. Andrews | 2 | Foreign body in trachea | | " | Good | | " | | Private |
| ..... | " Gunn | 3 | Diphtheria | None | " | Bad | 10 days | " | 28 days | " |
| ..... | " R. G. Bogue | | " | None | " | ..... | | " | | " |
| ..... | " H. A. Johnson | 7 | Epithelioma in larynx | None | High trache. Tumor removed twice, 2d sucessf | Med | 1 year | " | | " |
| ..... | " " " | 3 | Diphtheria | None | Trache. above thyroid. | Bad | 4 days | Died | 1 hour | " |
| ..... | " " " | 10 | " | None | " " " | Bad | 8 " | Died | 10 hours | " |
| ..... | " " " | 60 | Cancer in larynx | None | " " " | Med | 5 months | Lived | 3 mos. | " |
| ..... | " " " | 5 | Diphtheria | Art. mortis | " " " | Bad | 7 days | Died | few hrs. | " |
| ..... | " " " | 6 | Memb. croup | None | " " " | Fair | 5 " | " | 23 hours | " |
| ..... | " " " | 4 | " | None | " " " | " | 7 " | " | 22 " | " |
| ..... | " " " | 40 | Swelling of laryngeal muc. memb. | Ulc. larynx | " " " | " | Not stated. | Lived | | " |

RECAPITULATION.

| | CASES. | DIED. | PER CENT. MORTALITY. |
|---|---|---|---|
| Total for all causes | 35 | 20 | 57 |
| For memb. croup or diphtheria | 21 | 17 | 81 |
| For foreign bodies in trachea | 6 | 2 | 33 |
| For Oedema glottidis | 4 | 1 | 25 |
| For other causes | 4 | 0 | 0 |

The diphtheritic portion of the cases, arranged by age, are as follows:

| | CASES. | DIED. |
|---|---|---|
| Under 1 year | 3 | 2 |
| 1 to 2 years | 3 | 3 |
| 2 to 3 " | 4 | 3 |
| 3 to 4 " | 3 | 2 |
| 4 to 5 " | 1 | 1 |
| 5 to 6 " | 2 | 2 |
| 6 to 7 " | 2 | 2 |
| 7 to 8 " | 1 | 1 |
| 8 to 9 " | 0 | 0 |
| 9 to 10 " | 1 | 1 |

The case of epithelioma of the larynx was a remarkable one. The growth obstructed respiration, so that asphyxia was imminent. Prof. H. A. Johnson then performed tracheotomy. The tumor continued to grow until it encroached downward upon the lower part of the larynx; the patient still wearing the tracheotomy tube. Prof. Johnson then divided the thyroid cartilage in the middle line, and removed the growth, which had its seat just below the vocal chords. The wound healed nicely, the patient still wearing the tracheotomy tube. After a considerable period the growth returned, and Prof. Johnson repeated the thyrotomy, removed the tumor more thoroughly, and cauterized the seat of it with nitric acid. The recovery was good, and the surpising part is that after two operations of thyrotomy, the patient has a good and constantly improving use of the vocal chords in speaking. The last operation was many months ago. The tumor has not returned. Its character as an epithelioma was thoroughly demonstrated by the microscope.

(To be contined.)

# HISTORY OF A CASE OF STOMATITIS MATERNA AND INTRACTABLE DIARRHŒA COMPLICATING EACH GESTATION AND LACTATION; WITH DROPSY OF THE AMNION, AND PREMATURE EXPULSION OF AN EMPHYSEMATOUS LIVING FŒTUS IN THE LAST PREGNANCY.

By J. SCHNECK, M.D., of Mt. Carmel, Ill.

(Read before the Union Medical Society, June 27, 1876.)

Case: Mrs. M. S., aged 28, medium size, blonde, unusually fair skin, was confined with her first child, March 10, 1871. Soon after she discovered a sudden appearance of small blisters on the tongue and mucous lining of the mouth and cheeks; in a few hours they would discharge their contents, leaving an abraded fissured surface of a deep red color, very sensitive to the blandest articles of ingesta; even water or cold air would cause a feeling as if "red hot."

From that time to this, there has never been a time when the mouth could be said to be entirely free from this unnatural tenderness; being worse while nursing, and during the last four or five months of each succeeding pregnancy.

In a few days after the stomatitis had commenced, she was attacked with a diarrhœa, with at first semifluid stools and colicky pains with excessive borborygmus. Soon she had frequent passages consisting of mucus and half digested food, accompanied with severe griping, tenderness of abdomen, and neuralgic (probably partially hysteric) pains in different parts of the body, which were only relieved by large doses of opium.

The patient, in spite of treatment, gradually grew weaker and worse, until the end of the fifth month after confinement. On the death of her babe, Aug. 15, 1871, she commenced improving and in a few months had regained her former good health, except the tenderness of the mouth.

About Aug. 10, 1872, the woman again being pregnant, the mouth become worse, the intractable diarrhœa returned and soon assumed its former virulence; no treatment appeared of any permanent value; large doses of opium and other narcot-

ics were necessary to give temporary relief. On Dec. 15, 1872, she was delivered of a healthy child, apparently at full term. The diarrhœa, however, continued, the patient growing weaker and more emaciated.

March 8, 1873, I saw the patient for the first time, and found her very weak, unable to raise herself in bed, with a quick and weak pulse, fever during the day-time and night sweats. There was constant, burning sensation at the stomach, the bowels were swollen and tender, and when not under the influence of narcotics, excessively painful. The bowels moved from four to twelve times daily, the stools consisting mostly of bloody mucus and undigested food. The child was in ill health, very much emaciated, and nursed by its mother.

The child was ordered to be weaned, and the mother to have before each meal a powder of pepsin, bismuth subnitrate and prepared chalk, of each two grains. She was also to have regularly, elixir of iron, quinia and strychnia, and cod-liver oil. At the end of five weeks of treatment the patient had so far convalesced as to be able to perform her household duties, and soon recovered her usual health, in which she continued until her next gestation — nearly two years.

She menstruated last during the last week of October, 1875, suffered moderately from nausea and morning sickness during November and December, otherwise felt moderately well until March, 1876, when the same difficulty as in former pregnancies commenced. This time the stomatitis was not so severe as in the two previous gestations, while the enteric symptoms were worse.

She felt motion first during the first week of April. I saw her April 18, and found the mucous membrane of the mouth very red and painful, with deep fissures at the edge of the tongue; frequent dysenteric stools and great weakness. I ordered cod-liver oil three times a day, and one desert spoonful of the syrup of the hypophosphites (Churchill's) after each meal; also an emulsion of turpentine with opium and carbolic acid, a dose to be taken after each motion of the bowels.

On April 30th I found all the symptoms worse, the patient rapidly failing. The abdomen was as large as at full term.

The cod-liver oil was omitted in the treatment. I suggested the advisability of bringing on premature labor, as the only hope of saving her life.

On May 10th at my suggestion, Dr. J. J. Lescher was called in consultation. He believed the only reasonable hope of saving her life was in premature labor; but suggested a trial of powders of opium, 1 gr., and oxalate of cereum, 2 grs., three times daily in addition to the other treatment.

May 12th, I found the patient suffering from severe pains in the bowels and back, great dyspnœa, bowels not moving as frequently as before the last powders were taken. She drank much water, but passed less than the normal quantity; this had been the case for the last four weeks. The abdomen was much larger and she was unable to sit up on account of its size; at the last examination the skin being perfectly tense. The lower portion of the chest, including part of the sternum and ribs were all greatly involved in the enlargment. Percussion gave a dull sound from sternum to pubes, and from the right to the left hypocondriac region. Auscultation revealed nothing but an occasional striking sound, occasioned by the child striking against the inner surface of the uterus. There was no appearance of anasarca.

The patient positively refused to have premature labor brought on. In addition to previous treatment, diuretics and anodynes were directed.

May 16th, I was called again, and as I entered the door the membranes ruptured, and there was a great gush of water. On examination I found the child born, except the head, which was still in the vagina. When this was removed, there was another discharge of an enormous quantity of water. The placenta which was of unusually large size and very soft, soon followed. The cord was about twice the usual thickness, and very easily torn. The womb contracted well, the abdomen in due time assumed its normal size, showing that the enormous distention was occasioned by the contents of the uterus.

My attention was next directed to the child, which up to this time I had considered as being still-born, and in a state of decomposition. The skin was of a dark, venous color and

distended in every part to its utmost limit. Eyes were swollen shut; cheeks encroaching on the nose until it was scarcely recognizable; limbs apparently twice the normal size, it being scarcely possible to bend fingers, arms or legs without breaking the skin. Pressure gave a feeling as if pressing on a half-solid India rubber ball, making an indentation on the surface, it would suddenly spring back to its former shape, showing that the distention was not caused by serum. While examining the child it made three separate and distinct efforts at breathing, to the utter astonishment of all present; but respiration was not established. The mother rapidly recovered her former health, except that the tenderness of the mouth still continues.

The above case is of unusual interest for the following reasons:

1. As pointing to a common cause of the stomatitis materna and the intractable form of diarrhœa that sometimes occur during gestation and lactation. The cause of neither so far as I am aware, has ever been satisfactorily explained.

2. As adding another, to the small number of reported cases of dropsy of the amuion. The cause of this has also called forth many ingenious theories, but none so far have been satisfactory to the profession.

3. But especial interest is attached to the fact of a *live born emphysematous fœtus.* I have examined eight[1] of our most prominent authors on midwifery and in none of them have I found any reference to a similar case. Leishman, Ramsbotham and Cazeaux, all speak of a large accumulation of gas in the abdominal and thoracic cavities of the fœtus as sometimes obstructing labor. And Depaul is quoted by the last named author as having had a case where there was general emphysema involving all the cellular tisue; but in every instance they speak of it as the result of death and commencing decomposition.

[1] Schroeder, Manual of Midwifery, 1873; Churchill's (by Condie) System of Midwifery, 1851; Ramsbotham, Process of Parturition, 1842; Lee, Theory and Practice of Midwifery, 1844; Meigs, Treatise on Obstetrics, 1856; Moreau, Practice of Midwifery, 1844; Cazeaux, Theoretical and Practical Midwifery, 1868; Leishman, System of Midwifery, 1873.

That there were three separate and distinct efforts to breathe after its birth, by the fœtus in this case, there cannot be a shadow of doubt, there having been three persons beside myself who witnessed it. Neither do I think that the phenomenon above referred to can be explained on the ground of the muscular irritability which sometimes continues for a short time after death, as this is known to be totally lost when decomposition commences, and before gas is evolved.

[We regret that on the question as to whether the fœtus was alive at birth, the author has not told us whether its heart was beating, also that he did not puncture the skin immediately after death, and thereby establish beyond a peradventure the nature of the material distending the cellular tissue.—Eds.]

---

## Editorial.

Efficient sanitary regulations intelligently framed and fearlessly enforced should preserve the lives and health of the citizens of a great metropolis like our own. Under existing circumstances they are exposed to preventable diseases, and sacrificed to others, whose prevalence and severity could be greatly affected by an intelligent application of the established principles of sanitary science.

The sanitary system adopted in Chicago, is manifestly incomplete, and its administration utterly inefficient.

The Health Department of the city is little more than a bureau of registration of births and deaths; the registration itself being almost valueless from its want of accuracy. Beyond this, what does it practically accomplish? The accumulation of offal in the process of decomposition, by which the soil is saturated and the atmosphere vitiated, is permitted in the streets and alley-ways, and even in front of the homes of nearly half a million of people!

Already the results of this criminal negligence are to be observed. Diphtheria in a virulent form, and scarlatina of a malignant type are more or less prevalent in several districts.

If the present condition of affairs is allowed to continue unchanged, we may expect the appearance in our midst of other equally severe types of zymotic diseases.

Should the filth accumulations of to-day be suffered to remain, and become augmented by the usual increment of the winter, the ensuing warm season will but add to the noxious emanations from these hot beds of disease germs.

If the medical profession of the city shall not exert its influence, both in the creation of a proper public sentiment, and in the vehement urging of the municipal authorities to a more satisfactory performance of their public trust, certainly it will fall far short of its duty.

Only a false and mistaken economy will permit such grave consequences as are imminent, to occur. The judicious expenditure of a moderate sum of money at the present time, in an effort looking toward the removal of the sources of disease in Chicago, will not only prevent much needless suffering, but actually save many human lives.

---

# Hospitals.

## COOK COUNTY HOSPITAL, MEDICAL DEPARTMENT.

Service of DR. LYMAN.

1. *Pleurisy with Effusion; Aspiration.*

May 12, 1876. A tall young Norwegian, aged twenty-two, took cold two weeks ago, and suffered from sharp pains in the left side. A fluttering movement of the epigastrium indicates a displacement of the heart downward and inward. There is a slight increase of elevation on the right side of the chest. He has a cough, caused by bronchitic inflammation. The left side is dull below a line level with the nipple, but when he lies down resonance returns in front, and the posterior surface becomes dull throughout. The left side of the chest is just half full of fluid. It is a question whether diuretics, cathar-

tics or sudorifics make much impression on collections of this kind. We get more effect in inflammatory diseases from alteratives and tonics. It will be best to remove the fluid without delay. Three days is long enough to wait, for as the lung is driven up it might be retained in its forced position long enough to become fixed. Deformity might then result from the collapse when the fluid should have disappeared. A hollow needle was introduced about two inches beneath the angle of the scapula, between the eighth and ninth ribs, and pushed in two and a half inches. The flow of serum began, then stopped, and did not start again until the needle was turned and the direction changed a little. Dr. L. remarked that the lung, as it unfolds on the retreating liquid, might touch the needle and excite cough. The entering of air into the expanding portions may also excite cough. If the needle should penetrate some vital organ, as the liver, the spleen, or the lung itself, no harm would follow these punctured wounds. If the effusion should have become purulent, it will be necessary to make a free incision, allow a free escape, and use an injecting fluid. It will be easy to tell whether the case is one of serous effusion or not, for on the one hand we shall have a clear history of an acute attack and the progressive distension of the sac; but if it is a case of empyema, the constitution will have been broken down. The inevitable hectic in these cases will indicate their character. Two quarts of a straw-colored liquid were obtained by the operation, showing how great the loss of strength must be from the deprivation to the blood of albumen, with which the contents of the jar were charged. The needle was withdrawn without pain or hæmorrhage. A bit of adhesive plaster was stuck on the wounded surface, and opium was ordered to allay irritation. It was remarked that the needle should be carefully disinfected by drawing carbolic acid through it. The heart now appeared near its normal position.

2. *Hemiplegia and Coma through Embolism.*

May 16. A middle aged man, admitted for acute rheumatism of the right shoulder. Yesterday, while he was perfectly conscious, the left arm began to have a rigidity. He could

answer questions, though he was unable to put out the tongue. There was loss of motion first, then partial loss of consciousness, lapsing into complete paralysis and coma. We found a loud murmur of the heart had made its advent, and we suspect that the pain complained of a few days ago was due to the rheumatic invasion. The murmur indicated a fibrinous exudation on the valves. A portion of this we suppose has been washed off and lodged in the right middle cerebral artery. The brain was not deluged, as in apoplexy, but the supply of blood was cut off. The effect was gradual; the surface was the first to feel it. Such cases are not immediately fatal. The particle of embedded matter may be small, and we may have only softening, followed by fatty degeneration. It may afterward become capsulated, as in slight apoplexy. The patient died on the 17th. Large vegetations were found on the mitral valve, and an embolus was discovered on the right side of the brain, at the bifurcation of the middle meningeal artery.

3. *Tubercular Peritonitis.*

A young Swedish machinist, injured by lifting too much, as he says. Last fall he coughed and spat blood. Since then these symptoms have ceased entirely. He is now greatly emaciated; pulse rapid; temperature 99½°; abdomen distended and tender. There is abundant resonance over the left lung and the lower half of the right. There is reason to believe that the first step in consumption consists of inflammation of the bronchioles in scrofulous persons. The lymphatic vessels open in the terminal branches of the bronchial tubes. With new products come new processes. The lymphatic glands grow by the deposit of a new material. Their enlargement causes pressure, sets up secondary bronchitis, awakes cough. Finally the tubercular mass which has arisen, becomes crowded together, and its elements begin to die. The surrounding tissues becoming infiltrated, break down in turn, and are cast off. This is different from pneumonia, and the explanation is different from the ideas of text books for the last half century. As tubercular deposits in the lung involve not the primary tubes, not the air cells, but the lymphatics, so we may have

considerable progress in the formation of tubercle without cough. It is evident that in the case before us the continuance of the tubercular symptoms only from last fall is not sufficient to account for the patient's condition. The progress of his disease has been latent in the lungs. Some of the symptoms of consumption are secondary. Let us see as to his digestive system. The tongue is clean, but he has been troubled with vomiting. Pressure over the hypogastric region causes pain. From a spot above Poupart's ligament, clear across the abdomen, there is a hard nodular mass to be felt. The probability is that it consists of enlarged lymphatic glands. Tubercular matter has been deposited, increasing their volume and producing peritoneal inflammation. A case like this will never live long enough to have serious inroads made upon the lungs, unless by deposit of miliary matter, which causes rapid infiltration. A child may have a scrofulous inflammation of the ear; the glands behind the ear become tuberculous, and tubercular meningitis may be induced. There is therefore a striking resemblance to what takes place after inoculation of syphilis. It is important to distinguish between these different relations. Pneumonia is the least dangerous; tuberculosis is next so; amyloid degeneration is the most serious of all, destroying any and every organ in the body — three processes nearly related, yet their results far removed.

4. *Gonorrhœal Rheumatism.*

May 23. A slender young man says he had inflammatory rheumatism last summer, and was confined six weeks with a painful swelling of his ankles and knees. Ten weeks ago he contracted gonorrhœa. He has had the characteristic discharge ever since. Two weeks ago he began to suffer pain in the head, and afterward in the right hip and knee. On admission his circulation was 96; temperature 102°. He was ordered ten grains of salicylic acid every hour for two days. No relief of pain. Hereafter he will have ten grains of the iodide of potassium, in a fluid drachm of the tincture of guaiac, four times daily. We think salicylic acid has been given long

enough. Generally two or three drachms are sufficient. So much has been given, but he is not relieved.

Gonorrhœal rheumatism is a result of a species of pyæmia. The fluid of the urethra sets up a poisoning of a peculiar character. With lying in women a low grade of uterine inflammation may cause mammary abscess. Articular inflammation even may occur in such cases. In the same way here. If it were simply rheumatic we should get relief by the use of corresponding remedies. The joints are not materially swollen to sight or to feeling, but he cries out pitifully when the leg is raised. We cannot in the description very well distinguish between this and a surgical disease, or between this and rheumatism. The most we can say is that it is an exquisitely painful affection. The duration may be two or three months. He must have opium, besides the iodide of potassium. We meet patients suffering from gonorrhœal neuralgia, affecting every part of the body. They have "rheumatism all over." The joints become so stiff they cannot be moved. Anchylosis may result. A man is reported as having acquired in this way anchylosis of every joint in his body. We have seen several individuals who, strange as it may seem, have more than once had such a disease from such a cause.

5. *Chronic Intermittent Fever.*

A well developed man had his first attack of ague in Indiana, last October. He had a relapse in March. Calomel and quinine broke up the fever then. Yesterday there was another relapse. The chill was followed by a pulse of 120 and a temperature of 104°. In typhoid fever the temperature is not so high at first. There is an impoverished condition of blood, a deposit of the *débris* of the blood in the liver, spleen, kidneys and brain. The functions of the nervous system are correspondingly disturbed. Alterations of the tissues of the body in consequence of hardship or exposure brings on a renewal of the attack. When the daily mean of temperature rises above 72°, the causes become prevalent, whatever they may be. Some say germs, others vicissitudes of temperature. The latter can hardly be accepted as sufficient. The disease is

probably due to germs. In the heat of the day these are carried high; at night they fall. They enter the body through vascular walls, and poison as really as arsenic. The limit of the power of the microscope, depending on the constitution of light, enables us to define objects $\frac{1}{100000}$ of an inch apart. But this is only half way to the ultimate molecules of matter, and a particle one-tenth of $\frac{1}{100000}$ of an inch in diameter may contain a million of molecules. Such a cause might poison and alter the blood most vitally without our being able to see the process. We want to administer something powerfully oxidizing in character, to wash or cleanse the body of the remains of this disease. We should administer first a diuretic. The acetate or the citrate of potassa is useful if quinine alone has failed. But, if they are not, a course of nitric acid may relieve for years.

6. *Pneumo-hydrothorax.*

June 6. A young man, rather small, aged twenty, a teamster, with bright dark eyes, began to cough a year ago. A month later he spat blood. He has expectorated, has had shortness of breath and night sweats ever since. Now respiration is rapid without dyspnœa. There is considerable abdominal movement, and but little thoracic. The right side is resonant down to the lower edge of the ribs. The liver is either contracted or displaced. There is too much air there; but this does not tell what has happened. By auscultation an amphoric sound is obtained. This is significant. But another rarer phenomenon is there. If we shake him a sound of splashing proceeds from the chest. This proves that both air and fluid exist together in the same compartment. Probably in the beginning he had pneumonia at the apex of the right lung, resulting in caseous deposits which broke down, cough and finally a rupture of the abscess into the pleural cavity.

*Examinations post-mortem.*—The case terminated suddenly. The patient seemed to be as well as usual during the week. He rose very early on June 13th and went to the bath room, then he returned quietly to bed. That is the last that was seen of him alive. When the nurse called him to get up he

was dead. Both lungs were tuberculous. An old abscess of large size at the apex of the right lung, and a ragged opening at the top into the pleural cavity. The walls of the pleural sac were covered with discolored granulations. The cavity was partially filled with a dark, floculent and rather offensive liquid. The liver was crowded down. A mass of coagulated fibrine extended out of the heart into the trunks of the larger arteries. It is probable that death occurred as a consequence of arrest of the circulation. The fault was in the failure of the heart itself. There was at first some diminution of its force, the effect of innutrition of the nerve centers. More work had to be done, but the rate was not sufficient to keep the blood from coagulating. Fibrine began to separate, increasing the difficulty. The blood failed still more to reach the brain. Finally, as a result of this vicious circle, we may say the immediate cause of death was syncope.

7. *Bright's Disease and Degeneration of the Liver.*

Dr. L. introduced a sample of urine for analysis. It is not acid. It looks very turbid and high colored. In process of warming it begins to grow transparent, and when heated it becomes clear. Its turbidity is due to the presence of earthy phosphates, kept in solution by acid phosphates. When boiled it becomes turbid again. Nitric acid only increases the turbidity, showing that it is charged with albumen. A drop of dilute sulphuric acid poured on a thin stratum of this urine on a plate causes a violet color to play over the surface—a proof that bile pigment is present.

Now observe the patient. A finely built man, aged fifty-three; admitted yesterday; sick three months; skin pale and shining; legs, thighs, scrotum and hips all pitting on pressure. Resonance on the right side extends down to the nipple, but immediately below it is lost. The abdomen is flat, yet the peritoneal cavity contains fluid. The region of the stomach is firm, presenting a solid resisting mass, with shelf-like edges extending very near to the umbilicus. Percussion produces a flat sound all over the abdomen, except the space occupied by the colon; but deep resonance may be perceived behind the

tumor. Only one thing can be the cause of this dullness — that is an enlarged liver. The urine pointed to disease of the kidney; besides, his peculiar whiteness would indicate the same thing. Simple inflammation of the kidney, some think, may be cured by $\frac{1}{32}$ of a grain of the bichloride of mercury and two grains of the iodide of potassium, three times daily, during several months. In general, put the patient to bed and keep him warm. If the house be heated by a furnace, it will be a good plan to give him a hot-air bath repeatedly, making him occupy a chair over a register enclosed in a little tent. The Turkish bath is useful. Give jalap and salts, or gamboge and colocynth. But remember that occasionally these remedies may take the patient out of the world by purging. Elaterium has its victims. In such ways, if there be no contra-indication, the skin and the bowels may be got to do the work of the kidney till the dropsy has subsided.

But how about the enlargement which we found? If this were an abscess it should give a sense of fluctuation. There is none. There should also be hectic fever and sweating. These do not exist. Cystic enlargements are generally projecting, distinctly globular and fluctuating. But there is nothing of the kind. In short, the history and the symptoms point pretty decidedly to malignant disease of the liver. It is however a good case to illustrate the uncertainties of diagnosis, for it is entirely possible that that may be amyloid degeneration of the liver and kidneys, or it may be fatty degeneration. We have simply a mass of probabilities from which to make a selection. We may therefore be prepared for differences of opinion. Different minds are affected differently by sets of symptoms. If you ask a positive opinion of what we have, then I must tell you I don't know. We shall wait to see. Examination after death, June 20, disclosed cancer of the liver.

# Book Reviews.

[NOTE.—All works reviewed in the pages of the CHICAGO MEDICAL JOURNAL AND EXAMINER may be found in the extensive stock of W. B. KEEN, COOKE & Co., whose Catalogue of Medical Books will be sent to any address upon request.]

CLINICAL LECTURES ON DISEASES OF THE HEART AND AORTA, by *George William Balfour, M.D., St.And. F.R.C.P. Ed.*, Physician to, and Lecturer on Clinical Medicine in the Royal Infirmary, Edinburgh. Philadelphia: Lindsay & Blakiston. 1876.

This is a work of 424 pages, relating to the diagnosis and treatment of cardiac diseases and affections of the aorta. It has the form of a series of clinical lectures; not that any such lectures were really delivered, but because the author found it more convenient to express himself in this manner.

The book is written in that positive style—*never sustained by experience*—which is so attractive to students and a class of medical men who are constantly searching for specifics in therapeutics. This style will add to its popularity with many, and the qualification of some of the more positive statements will give it the confidence of thoughtful readers.

Upon the first page we find this comforting statement for nervous and dyspeptic individuals who suppose themselves the victims of incurable disease of the heart: "Should a patient come to you complaining of palpitation, irregular action, or of his heart generally, you may at once assure him, without much fear of being wrong, that his heart is all right."

We are taught the difference between pulmonary and cardiac breathlessness, and shown how the latter may be dependent simply upon blood changes.

The character of the arterial pulse, in various forms of cardiac disease, is described; and we are told that visible venous pulsation is invariably a sign of considerable dilatation of the right side of the heart. However, we must not suppose that this dilatation is necessarily due to organic disease of the heart, for it may have no other cause than obstruction to the

flow of blood through the lungs, resulting perhaps from simple bronchitis.

The author considers superficial dullness of no importance in determining the size of the heart. He recommends that deep-seated dullness be determined from above downward, on a vertical line one inch to the left of the sternum, and that the extent of lateral dullness be ascertained on the plane of the fourth rib. We are reminded that the apex beat may vary an inch or more from its ordinary location, with changes in the position of the patient.

An accentuated, pulmonary second sound is said to be the most persistent of all the acoustic phenomena indicative of cardiac disease, and it is frequently the *only* distinctly abnormal sound to be detected. The author holds that accentuation of this sound, if unconnected with any pulmonary disease capable of producing congestion of the lungs, invariably indicates valvular lesions, and accentuation of the aortic second sound is invariably a sign of dilatation of the aorta or arteria innominata.

Regarding reduplication of the heart sounds, he thinks the first sound becomes reduplicated, because excess of blood pressure in the heart retards the closure of the tricuspid valves; and the second sound is reduplicated because excess of pressure in the aorta accelerates the occlusion of the aortic valves.

Murmurs are thought to be of little value in diagnosticating disease of the heart. He says: "It is obvious that murmurs cannot of themselves be accepted as certain indications of cardiac disease, even although we can positively connect them with the lesion of a definite valve, because that lesion may be temporary in its character, and wholly unconnected with actual disease of the valve affected. To this there is but one positive exception — the so-called presystolic murmur." The latter murmur — indicative of mitral stenosis — is usually thought to be very uncommon; yet we are told that it is one of the most common of endocardial murmurs, and the one most easily detected. The presystolic — or, as the author terms it, the auriculo-systolic murmur — is described as a rough sound capable of being represented phonetically by the symbols

*Rrrb* or *Voot*, a sound preceding the apex beat and carotid pulse, and usually running quite up to them; separated from the second sound of the heart by an appreciable interval, and almost invariably accompanied by a purring tremor over the mitral area. He does not enter into a discussion of the manner in which this sound is produced, but simply states his views — cites some of the objections, and refers the reader who cares to pursue the subject to an article published in the *Lancet*, May 25th, 1872, p. 714.

The causes for the irregular transmission of aortic murmurs are not well understood; therefore, we are pleased to find in this work a very plausible explanation of the matter. This explanation would lead us to believe it easy to diagnose the exact condition of the aortic valves by the quality of the murmur and its area of diffusion.

The quality of an endocardial murmur is generally thought to be the least in importance of its elements; but we are told that this element alone is often sufficient to establish the diagnosis.

Regarding aortic diastolic murmurs, we find the following interesting summary:

"A diastolic murmur at or below the level of the aortic valves, chiefly audible in the line of the sternum, is significant of aortic incompetence. If this diastolic murmur be inaudible in the carotid arteries, it is invariably accompanied by a systolic murmur, having its maximum intensity at the aortic valves, or in the so-called aortic area; and this indicates comparatively trifling incompetence, with considerable obstruction at the aortic orifice, most probably from calcified semilunar valves. If this diastolic murmur be distinctly audible in the carotid arteries, it is invariably preceded by a loud systolic murmur in them, the systolic portion of the murmur being not always very audible in the aortic or in any part of the cardiac area; and this indicates very considerable incompetence, with comparatively trifling obstruction."

The first effect of aortic regurgitation is to overload the left ventricle, a condition which gives rise to various distressing symptoms — pain, palpitation, etc. We are told that to over-

come this condition the left ventricle dilates, so as to make room for the increased amount of blood; but as dilatation would only relieve the heart temporarily, the ventricular walls become hypertrophied.

Many writers believe that hypertrophy may pass beyond the degree sufficient to overcome the obstruction to the circulation, and thus become an element of danger. We believe the author right in thinking this state of matters extremely rare, and in even doubting its possibility. He thinks the prognosis more unfavorable in aortic incompetence than in a similar condition of the mitral valves, and that in the former, sudden death is more frequent, so "That the probability of life is very greatly in favor of mitral lesions."

In the treatment of aortic incompetence reliance is placed principally upon Digitalis, in doses of m. xv. to ʒ ss. of the tincture, every four hours. Smaller doses are sometimes useful; but these larger doses are usually needed, and they are considered perfectly safe if watched. When giving these large doses, we should at once suspend the use of the medicine if the quantity of urine diminishes, or at least as soon as the pulse begins to falter or nausea supervenes; but the same precaution is not necessary with small doses, and we need not fear evil effects from the large doses unless these symptoms occur.

For the neuralgic pain which so often accompanies this disease, arsenic is recommended. "In all forms of cardiac angina arsenic is almost a specific, and in this form it certainly acts with great benefit."

We look with suspicion upon medicines which are recommended as "almost specifics;" yet there can be no harm in trying the arsenic, for it is thought to strengthen the cardiac walls.

"A systolic apex murmur is by no means always a certain proof of any positive derangement of the cardiac mechanism." "Even though regurgitation be unequivocally proved to exist, along with a systolic apex bruit, mitral disease or deformity is not therefore a necessary consequent, because both do occur in a not inconsiderable proportion of cases in which the mitral

valve is nevertheless perfectly healthy." To many this statement may appear singular, yet we think it will be found correct; for there are numerous cases in which the heart, weakened by disease, dilated, so that the auriculo-ventricular openings become too large to be closed by the valves. With regard to this the author says that cardiac dilatation is invariably revealed by mitral regurgitation, which, in more severe forms, is associated with tricuspid regurgitation also; and this dilatation may occur independently of valvular disease, giving rise to curable mitral or tricuspid regurgitation.

In curable mitral regurgitation, it is common to obtain a murmur over the left auricle, synchronous with the systole of the ventricles. This murmur is usually most distinct about an inch and a half to the left of the pulmonary area. It can generally be heard over the aorta and carotids (when it is usually termed an anæmic murmur); in some cases it may also be heard at the apex.

Among the diseases which may give rise to curable mitral regurgitation, the author enumerates typhus, enteric and relapsing fevers; erysipelas, chorea, and some forms of anæmia; and he thinks it probable many others may have a similar effect. Curable mitral regurgitation is to be treated by general tonics, digitalis and arsenic.

The frequent disappearance of endocardial murmurs in organic disease, as well as their occurrence where no actual cardiac disease exists, renders it important for us to be able to diagnose valvular lesions independently of murmurs; and, fortunately, this is not very difficult, as the author has shown in a case illustrative of the manner in which we are to proceed by the process of exclusion.

One chapter is devoted to the subject of irregularities of the pulse, and arterial and cardiac palpitation; and another, of special interest, to the secondary results of cardiac disease.

In an article on angina pectoris, chloroform is said to be the best remedy during the attack; but æther, nitrite of amyl and morphia are also recommended. In this connection we find the following statement regarding the use of chloroform:

"I know of no diseased condition which should deter us

from its cautious employment where that is otherwise indicated, as I hold it imperatively to be in cases of angina pectoris; for what we desire to do in such cases can only be done by means of chloroform."

In this the author refers to the speedy relief of pain. He recommends giving the patient a small chloroform smelling-bottle, the fluid being poured over a sponge, so that it cannot spill. This the patient holds to the nose, breathing deeply as possible until relief is obtained. When the narcotic influence is obtained the bottle drops from the patient's hand, and "with it rolls away all risk of an overdose."

The author doubts the possibility of diagnosing a fatty heart, though he says we may have strong reasons for suspecting it, and our suspicions may often be correct.

The last chapter is devoted to the treatment of internal aneurism by iodide of potassium. Referring to other plans of treatment, the author says that all, excepting Mr. Tufnell's plan of perfect rest, are attended with much danger. He thinks the treatment by iodide of potassium perfectly safe, and sure to afford relief. "It relieves the pain and all the other symptoms of aneurism more rapidly and more effectually than any other treatment, apart even from the powerful agency of the recumbent posture." He gives a score or more of histories in substantiation of this statement, and finally adds his views of the proper manner of administering the medicine, of its mode of action, and of the chances for life in cases treated by it; and we are told that there is absolutely no risk from its use. "It is almost absolutely certain to give relief and prolong life," and "No other form of treatment holds out anything like an equal prospect of relief, if not of cure."

The dose may vary in different cases from gr. v. to gr. xxx., three times a day. The latter quantity is often necessary before good results ensue, and it is apparently as well tolerated in most cases as the smaller dose, while in other cases it seems even better borne. We are advised to commence the treatment with potass. iod. ℥ ss., three times a day, conjoined with a full dose of opium or chloral at night to allay irritation and secure rest. If unpleasant results follow, the remedy should

be suspended for a day or two, and then given again in large doses. In a few cases large doses cannot be employed; but it is believed that persons who experience poisonous effects from small quantities of the medicine are likely to obtain remedial effects from proportionately smaller doses of the same. Two cases are mentioned in which the remedy could not be tolerated.

The author thinks it important to saturate the system speedily with the medicine, and to maintain this condition, perhaps with slight intermissions, for several months, or at least until the symptoms are relieved. He thinks the good effects of the remedy depend, *first*, upon its sedative action on the heart, and *second*, upon a peculiar influence upon the arterial system, which not only causes contraction of the aneurismal sac (as it would of a simply dilated artery), but also induces thickening of its walls; and he does not believe the relief due to increased coagulability of the blood.

Perfect rest is an important — almost essential — element in the treatment; but there seems to be no need of restricting the diet, though fluids should be taken sparingly. Alcoholics are always injurious in these cases, excepting for temporary stimulation.

A perfect cure can be expected only in sacculated aneurisms and in those of a more or less traumatic character occurring in comparatively young individuals; though great relief and considerable prolongation of life may be confidently looked for in almost every instance where this plan of treatment is followed.

There are a few typographical errors in the book, though we notice only one of importance. On the thirty-second page the normal positions of the aortic and pulmonary sounds are said to be at "the third right and the second left costal cartilages." This might confuse the student who was not aware that these positions are at the *second* right and *third* left, etc.

We notice two or three grammatical errors, and several perplexing sentences; yet, as a whole, the work reflects credit upon its author, who has treated his subject thoroughly, and added to its standard literature some original thoughts which will render the work a valuable acquisition to the profession.

E. F. I.

A PRACTICAL TREATISE ON THE DISEASES, INJURIES AND MALFORMATIONS OF THE URINARY BLADDER, THE PROSTATE GLAND, AND THE URETHRA, by *Samuel D. Gross, M.D., LL.D., D.C.L.*, Professor of Surgery in the Jefferson Medical College of Philadelphia. Third edition — revised and edited by Samuel W. Gross, A.M., M.D., Surgeon to the Philadelphia Hospital. Illustrated by one hundred and seventy engravings. Philadelphia: Henry C. Lea. 1876. pp. 574.

"What shall be done unto the man whom the king delighteth to honor?" What but to say that his work is worthy of the hand that wrought it. The elder Gross has now well nigh reached the climax of the grandest success possible for an American surgeon. As an instructor, practitioner, *clinicien*, operator, biographer and author of scientific works, his eminence is to be measured by the extent of his reputation. Decorated with the doctorate of Oxford, and crowned with the highest of honors by the late International Medical Congress at Philadelphia, our author, it would seem, can hereafter add but little to the rounded completeness of his splendid professional career.

All of Dr. Gross' works are valuable, and many readers will be pleased to accord to a third edition of the present treatise the reception given to its predecessor, which has now been out of print for several years. It differs from the latter in that the chapter on the anatomy of the urinary organs has been omitted, as well as the appendix relative to the prevalence of stone in the bladder and calculus disorders in the United States. Dr. C. H. Martin, of Mobile, Alabama, has contributed for this edition, the statistics of lithotomy as performed by American surgeons, and several new engravings have been supplied by Dr. Barnes, the Surgeon General of the United States Army.

Dr. S. W. Gross, the son of the distinguished author, has been entrusted with the general work of revision, and the preface states that he has brought the work "fully up to the existing state of our knowledge." After a careful examination of the results of his efforts, we are prepared to endorse

this statement as one which the candid reader cannot fail to accept.

Since the chapters on Tumors of the Bladder and of the Prostate Gland, are entirely written by the son, we naturally turn to them in the expectation of noting the contrast between these and other portions of the work. And yet the younger hand has produced effects which are well nigh undistinguishable in style, practical value and suggestive, critical analysis, from those to which the medical public has been long accustomed.

In alluding, however, to the histological structure of the hypertrophied prostate, it is here stated that the anomalous condition is due to hyperplasia of the muscular and fibrous elements at the expense of the glandular structures "which disappear in part or entirely." How could there possibly be, after this partial or complete disappearance of the glandular structures, that "free discharge of prostatic fluid," which is enumerated among the symptoms of advanced and severe cases? It is more than probable that the histological status of the prostate, when hypertrophied, is just the reverse of that described. The fibrous elements are rarely affected, while the proliferation of muscular and glandular elements is in active progression. Iverson declares that this hypertrophy is due to "a myomatous, or myoadenomatous hyperplasia," while, according to Rindfleisch, there is "a fibro-muscular overgrowth of the peritubular stroma of single segments of the gland, with a coincident *elongation* and *multiplication* of the tubuli themselves."

There is one caution which the professional reader should observe in the consideration of this chapter, and that is not to experiment too fearlessly with the plan of treatment recommended by Professor Heine of Innsbruck. This method consists in injecting the gland through the anterior wall of the rectum, with solutions of iodine, by the aid of a Pravaz syringe. Heine's solution is composed of two drachms of the iodide of potassium, two ounces of tincture of iodine and *two* ounces of water (not *six* as stated in the text). The younger author is of opinion that "this plan of treatment deserves

more extended trial," while he admits that there is risk of suppuration. Our advice on this point is that lately proffered by the *London Punch* to young men contemplating matrimony, "Don't!"

Already Prof. Dittel of the General Hospital at Vienna — a man of unsurpassed experience in diseases of the prostate gland — has had a fatal case resulting from two injections merely, each of four drops of Heine's solution. When last heard from, Prof. Dittel did not propose to experiment with it again, as he had combatted without success, in this particular case, peri-prostatitis, peri-urethritis, peri-urethritic abscess, peri-proctitis, cystitis, pyelitis and nephritis!

Of the work as a whole, we need but say that it is fully equal in value to the other treatises by its eminent author, in order to pronounce its highest encomium.

---

## BOOKS AND PAMPHLETS RECEIVED.

The Anatomy of the Head, with six Lithographic Plates, representing frozen sections of the head. By Thos. Dwight, M.D., etc. 1876.

Ziemssen's Cyclopædia of Practical Medicine. Volume VI. Diseases of the Circulatory System.

Observations on the Diseases of the Rectum. By T. B. Curling, F.R.S., etc. Fourth edition, revised and enlarged. 1876.

Chemia Coartata; or the Key to Modern Chemistry. By A. H Kollmyer, A.M., M.D., etc. 1876.

A Treatise on the Theory and Practice of Medicine. By Jno. Syer Bristowe, M.D., etc. Edited with notes by J. H Hutchinson, M.D., etc. 1876.

Public Libraries in the United States of America, their history, condition, and management. Special report, Department of the Interior, Bureau of Education. Part I.

Epitome of Skin Diseases, with formulæ. For Students and Practitioners. By Tilbury Fox, M.D., F.R.C.P., etc., and T. C. Fox, B.A., M.R.C.S. Henry C. Lea. 1876.

Principles of Human Physiology. By Wm. B. Carpenter, M.D., etc. Edited by Henry Power, M.B., etc. A new American edition, from the eighth revised and enlarged English edition, with notes and additions. By Francis G. Smith, M.D., etc. Henry C. Lea. 1876.

Transactions of the Texas State Medical Association. Eighth Annual Session, 1876.

Salicylic Acid; the experience of Maine Physicians in its use. By F. H. Gerrish, M.D. 1876.

The Hypertrophied Prostate. By R. F. Weir, M.D., etc. Being No. VIII., of Vol. II., of "American Clinical Lectures."

Life: What do we know about it? An Essay read before the Chicago Literary Club, May, 1876. By H. A. Johnson, M.D.

The Treatment of Anteflexions of the Uterus. By Ely Van De Warker, M.D. 1876.

Case of Large Cerebral Tumor, without Optic Neuritis, and with left Hemiplegia and Imperception. By J. Hughlings Jackson, M.D., F.R.C.P.

A Case of Double Optic Neuritis, without Cerebral Tumor. By J. Hughlings Jackson, M.D., F.R.C.P.

Points in the Surgery of Childhood. By J. H. Pooley, M.D., etc. Being No. IX., of Vol. II., of "A Series of American Clinical Lectures."

Hygeia, a City of Health. A Presidential Address, delivered before the Health Department of the Social Science Association, Oct. 1875. By B. W. Richardson, M.D., F.R.S. 1876.

Johns Hopkins Hospital. Reports and Papers relating to Construction and Organization. No. 2, with 14 Plates. By Jno. S. Billings, M.D. The Plans and Plates by J. R. Niernsée, Architect.

Transactions of the Medical Society of the State of Pennsylvania, at its 27th Annual Session, held at Philadelphia, May 31, and June 1, 1876. Vol. XI., Part I.

Transactions of the Medical Society of the State of California, during the years 1875–6.

Specialists and Specialties in Medicine. Address. By H. M. Henry, M.A., M.D., etc.

A Lecture on Specialism in Medicine. By E. D. Forée, M.D.

Vaginal Ovariotomy. By Clifton E. Wing, M.D.

The Operation for Stone as observed in some of the London Hospitals, together with a report of cases from private practice. By A. Van Derveer, M.D., etc.

---

The following exchanges were received during the year:

Allgemeine Medizin. Centralzeitung.
American Journal of Insanity.
American Journal of Medical Sciences.
American Journal of Microscopy.
American Journal of Obstetrics.
American Journal of Pharmacy.
American Medical Weekly.
American Practitioner.
American Psychological Journal.
Anales de Cienças Médicas, Madrid.
Anales de la Asociacion, Larrey, Mex.
Annales de Dermatologie et de Syphilig.
Annali Clinici della Ospedale Incurabili.
Archiv der Heilkunde.
Archives Générales de Médecine.
Archives of Clinical Surgery.
Archives of Electrology.
Archives of Dermatology.
Archives of Science.
Atlanta Medical and Surgical Journal.
Boston Journal of Chemistry.
Boston Medical and Surgical Journal.
Braithwaite's Retrospect.
Buffalo Medical and Surgical Journal.
Canada Lancet.
Canada Medical Journal.
Canada Medical and Surgical Journal.
Canadian Journal of Medical Science.
Centralblatt fuer Chirurgie.
Charleston Medical and Surgical Journal.
Chicago Journal of Nervous Diseases.

Cincinnati Lancet and Observer.
Detroit Review of Medicine and Pharmacy.
Deutsche Mediz. Wochenschrift.
Edinburgh Medical and Surgical Journal.
France Médicale.
Galveston Medical Journal.
Gazette Médicale.
Gazette Obstétricale et Gynécologique.
Gazzetta Medica Italiana, Lombardia.
Gazzetta Medica Delle Calabrie.
Giornale della R. Accademia di Medicina.
Giornale Veneto di Scienze Medic.
Indiana Journal of Medicine.
Journal de la Physiologie.
Journal de Méd. et de Chirnag. Pratiques.
Journal of the British Association.
London Lancet.
London Medical Times and Gazette.
Louisville Medical News.
L'Union Médicale.
L'Union Médicale du Canada.
Lyon Médical.
Melbourne Medical Record.
Memorabilien.
Nashville Journal of Medicine and Surgery.
New Orleans Medical and Surgical Journal.
New Remedies.
New York Medical Journal.
New York Medical Record.
Obstetrical Journal.
Ohio Medical Recorder.
Ohio Medical and Surgical Journal.
Oregon Medical Journal.
Oregon Medical and Surgical Reporter.
Peninsular Journal of Medicine.
Pharmacist.
Philadelphia Medical and Surgical Reporter.
Philadelphia Medical Times.

Polytechnic Review.
Progrès Médical.
Recueil d'Ophthalmologie.
Revista Medico-Quirurgica, Buenos Ayres.
Richmond Medical Journal.
Sanitarian.
Savannah Journal of Medicine.
Southern Medical Record.
St. Louis Clinical Record.
St. Louis Medical and Surgical Journal.
Student's Journal and Hospital Gazette.
The Clinic.
The Doctor.
The Practitioner, London.
The Western Lancet.
The West Virginia Medical Student.
Vierteljahresschrift fuer Dermatologie und Syphil.
Virginia Clinical Record.
Wiener Medizin. Chirurgisches Centralblatt.
Wiener Medizin. Wochenschrift.

---

# Summary of Progress in the Medical Sciences.

## I. Therapeutics.

1. *On the Methods of Elimination and on the Elective Action of Quinine.* Albertoni and Ciotto. (*Phil. Med. Times*, Sept. 2, 1876.)

Under this title Drs. A. and C. contribute the details of certain experiments made by themselves to the Bull. Gén. de Thérap., No. 8 and 9, 1876. They show—

1. That the presence of quinine in the bile may be demonstrated in from two to five hours after its introduction into the stomach.

2. The elimination of quinine by this path is quite active, since it is found only two hours after ingestion, and after the ingestion of sixty centigrammes (nine grains) only. It is found also that in the dog it produces in twenty-four hours an average secretion of four hundred grammes of bile.

3. Though quinine may not be found in the bile sometimes until two and a half hours after ingestion by the mouth, this is not against the fact that its proper route for elimination is through the hepatic secretion, since, as is known, this is much less rapid than elimination by the urine.

To MM. Albertoni and Ciotto the positive result that the biliary secretion contains quinine, administered by the mouth, appears important. The common mode of entrance of quinine, as of almost all medicines, is by the digestive tube. In the stomach its absorption is favored by the acids present, particularly by the hydrochloric acid, while in the intestine, on the contrary, this is rendered less easy by the alkalinity of the enteric and pancreatic secretions, and still less by the biliary acids which form insoluble compounds with quinine, though these last are soluble in excess of acid. Thus the absorption of quinine in the intestine only takes place sparingly under physiological conditions. Once entered by gastro enteric absorption into the portal circulation, quinine finds a natural anatomico-physiological route for elimination in the biliary secretion. This fact the experiments of Messrs. A. and C. positively demonstrated.

The presence of quinine in the biliary secretion serves to establish the important fact of its electivity of action, since it shows how this alkaloid places itself in intimate contact with the hepatic cells, constituting the functionating element of the liver, of which the bile is the complex product of secretory elaboration. Quinine, therefore, introduced by alimentary passages, appears to stop by preference in the liver and the spleen.

As regards the question whether quinine introduced into the circulation by other routes than by the portal system, is eliminated by the bile or by the urine alone, Messrs. Albertoni and Ciotto find that, hypodermically injected, quinine is eliminated by the urine — an important fact in practice, for it is thus useless to administer the remedy by this method if we expect to affect the liver and spleen. Quinine taken by the mouth is in part eliminated directly by the portal circulation without passing into the general venous system. As regards the length of time during which quinine remains in the organism, it has been found in the urine sixty-eight hours after ingestion. Finally, quinine was always found by MM. A. and C. in the spleen; nearly always in the liver, viscera in which it remains for the longest time. In the heart, quinine is found in larger quantity when introduced hypodermically than when taken by the mouth. In the brain it appears very quickly, but in smaller quantity than in the other viscera mentioned. J. S. K.

2. *Vomiting in Pregnancy cured by Hyoscyamia.* PITOIS. (*Phila. Med. Times*, Sept. 2, 1876.)

Dr. P. reports (*Med. Press and Circ.*, May 19, 1876,) two cases of this. After trying, unsuccessfully, all the usual means, it occurred to him to administer a teaspoonful every hour of a mixture containing five milligrammes of hyoscyamia in one hundred and twenty-five grammes of fluid. The next day the vomiting ceased, did not recur, and the patient went on favorably to the natural term of her pregnancy. A second case of the same kind was cured by the same remedy. J. S. K.

3. *Bisulphide of Carbon in the treatment of Cancer of the Stomach.* WHITTAKER. (*Clinic.*, Aug. 12, 1876.)

Dr. W. reports two cases of undoubted cancer of the stomach much

benefitted by the drug. Accepting the view that cancer is a dyscrasia, like tuberculosis, the doctor attributes the benefits to the solvent powers of the drug, and the relief of pain to its anæsthetic properties.

"The bisulphide of carbon, discovered by Lampadius, is a transparent, colorless, very volatile liquid, of great refractive and dispersive power, of a pungent, somewhat aromatic taste, and a peculiar odor, which when pure slightly resembles that of chloroform. Its vapor explodes when mixed with air, so that great care must be taken not to drop it near a light. Carbon bisulphide is miscible in all proportions with absolute alcohol, ether, chloroform, benzol, essential and fatty oils. It dissolves readily and freely among other substances, sulphur, phosphorus, bromine, iodine, iodoform, camphor, gutta percha, resins, wax paraffine, stearine, chloral hydrate, and those alkaloids which are soluble in ether and alcohol. When pure, its odor should not be fetid nor repulsive; it should not cause a dark precipitate in a solution of plumbic acetate, nor change the color of moist litmus paper. Its specific gravity is 1.27 at 15° C."

The doctor administered the drug in two to four drop doses, three times daily, in a teaspoonful of alcohol or almond oil. J. S. K.

4. *New Use of Quinine.* (*The Doctor*, September, 1876.)

The *Clinic* quotes from the *South. Med. Record* the report of a new use of quinine, founded upon its well-known influence on the white corpuscles, and therefore upon suppuration. In the first case six grains of quinine, dissolved in two-thirds of an ounce of water, was injected into the cavity of a suppurating pleura, and the discharge of pus rapidly diminished. An ointment of quinine (10 gr. to ℥j.) was applied to an ulcer on the leg, of two years standing, and associated with initial heart disease. In two or three days suppuration diminished, then healthy granulations appeared, and the ulcer was rapidly healed. The third experiment was on a mammary abscess, treated by the injection of quinine (grs. 10 to ℥j. of water).

J. S. K.

5. *Powder to prevent Pitting after Variola.* SENNABARIA. (*The Doctor*, September, 1876.)

Dr. S., of Ragusa, having successfully treated several cases of eczema and acne with a powder composed of four parts of flour of sulphur and one part of red precipitate (*Medical Record*, New York), was induced to try the same in variola. He painted the pustules first with glycerine at the period of suppuration, then dusted the powder over them. A crust forms which eventually falls off, and leaves the skin exempt from cicatrices. J. S. K.

6. *A New Adhesive Plaster.* (*Med. and Surg. Reporter.*)

Mix twenty parts mucilage and one part of glycerine. Spread three or four layers on linen—allow to dry. It may be kept more than a year without deterioration, and is much cleaner and cheaper than diachylon.

J. S. K.

7. *Salicin and Salicylic Acid in Rheumatism.* MADAGAN. (*Brit. Med. Jour. Cin. Lancet and Observer*, September, 1876.)

Dr. M. compares the merits of these two remedies. That each exercises a marvelous influence in cutting short an attack of acute rheumatism, there can be no doubt. I have used salicin or salicylic acid in every case of acute rheumatism which has come under my care since November, 1874 (a year and a half), and invariably with the same result—a rapid cure of the disease. Seeing a patient suffering from acute rheumatism, I have no hesitation in assuring him that within forty-eight hours, possibly within twenty-four, he will be free from pain.

The chief objection to salicylic acid is its tendency to produce irritation of the throat and stomach. I may have been unfortunate in my experience, but in every case in which I have given it this irritation has been complained of. All writers on this subject agree in referring to this irritation as one of its unpleasant effects. Salicylate of soda seems to give rise to the same disgreeable symptom. Salicin, on the other hand, never gives rise to any unpleasant effects. Salicin is a pleasant bitter, and is best given mixed with a little water, flavored with syrup of orange if desired. In adequate doses, say fifteen grains every two hours, it cuts short an attack of rheumatic fever, without producing disagreeable effects. It should be continued in smaller doses during the first fortnight of convalesence. J. S. K.

8. *Quinine Bromohydrate.* GUBLER. (*Jour. de Thèr.; Detroit Review.*)

From a study of this drug G. concludes:

1. The bromohydrate of quinine (bromide of quinine) corresponding to the sulphate of the same base, is more soluble and contains more of the alkaloid than the latter.

2. It possesses the physiological properties of the salts of quinine in general, and probably also the therapeutic virtues of its officinal congener.

3. The action of the bromohydrate of quinine seems, however, to differ from that of the sulphate, not only in the slight degree of cinchonism produced by it, but also by a marked tendency to nervous sedation and hypnotism.

4. The combination of these qualities especially adapts it to the treatment of the congestive and febrile affections which attack the nervous system, neuralgias due to neuritis, irritative neuroses, cerebral hyperæmias etc., in the treatment of which it has afforded excellent results.

5. The bromohydrate of quinine was remarkably efficacious in a case of intractable vomiting. It has proved of great service in a number of affections ordinarily amenable to the action of the sulphate of quinine, visceral or articular congestions—whether of diathetic origin or not—rheumatic or gouty symptomatic fevers, or fevers *a frigore*, etc.

6. The remedy has been given in doses of from six to fifteen grains a day in divided doses of three grains at a time, either in the form of pills or by hypodermic injection. J. S. K.

9. *Chloral Plaster.* (*Lancet.*)

For neuralgia, rheumatic pains, etc., use the ordinary emplastrum roborans,* and powder it with the chloral, apply the plaster to the affected part and leave it from twenty-four to forty-eight hours. When taken off the skin will be found studded with vescicles. These are to be pricked with a pin, followed by a dressing with simple ointment. The pain vanishes long before the vesicles are dried up.

10. *Salicylic Acid for the Profuse Perspiration of the Feet.* C. KUESTER. (*Deutsche Zeitschr. f. pract. Med.;* Centralztg No. 82, 1876.)

Dr. K. thinks the influence of the salicylic acid on the above disorder is equalled only by its wonderful effect in articular rheumatism. He uses the following powder: ℞ Acid. Salicyl. ʒ ij; Talc. Praep. ℥ ss; Amyl. ʒ iiss; Sapon. ʒ j. After the feet have been thoroughly washed and dried the powder is dusted over them and between the toes, and some of it is put in the stockings. In all cases so treated, within the past year, the cure was a permanent one. After two or three applications the bad odor disappeared; the secretion of sweat was considerably diminished in quantity, and the epidermis hitherto continuously moistened and macerated by the perspiration, became dry and could be removed in large shreds, under which was developed a new skin of an entirely normal appearance. If this treatment was discontinued after a few months, the excretion of sweat remained reduced in quantity *without being entirely suppressed.*

In a correspondence with the *Zeitschrift*, Dr. Page speaks very highly of the gratifying success he has had by treating the profuse prespiration of the feet with the following powder, viz.: ℞ Acid. Salicyl. gr. x; Acid. Tannic. gr. xv; Talc. Praepar. and Pulv. Irid. Florent. *aa* ℥ ss. M. The daily application of this powder between and under the toes and in the stockings or socks stopped the maceration of the skin, and fœtid odor attending it, and reduced the excretion of sweat to the normal standard.

11. *Sulphate of Cinchonidia.* BATLEY. (*Atlantic Med. and Surg. Jour.*, Oct., 1876.)

Dr. B., during the last five months, has largely used the above salt as a substitute for quinia sulphate. He finds it has the same antiperiodic and antipyretic properties of quinia sulphate, seldom produces tinnitus aurium, but is more inclined to nauseate a delicate stomach. For country physcians who furnish their own medicines it is decidedly cheaper than quinine.

A good way of administration to children is to make an acidulated solution of the salt, then precipitate the cinchonidia with ammonia. And administer the washed and dried precipitate with equal parts of liquorice powder. Owing to its insolubility it is almost tasteless. J. S. K.

12. *Bromohydric Acid.* FOTHERGILL. (*British Med. Journal.*)

Dr. F. obtains the acid by dissolving ten ounces, six drachms, twenty-

* Emp. oxidi ferri rubri. Strengthening Plaster.

eight grains of potassium bromide in four pints of water, and adding thirteen ounces, one drachm, thirty-seven grains of tartaric acid. The bitartrate of potash is precipitated and the hydrobromic acid remains in a clear, bright, almost colorless fluid, possessing an acid taste and the ordinary acid properties as well as the peculiar properties of potassium bromide, as compared with any other salt of potash. It prevents the headache following a dose of quinine, of which salt it is an excellent solvent. It is peculiarly useful in hysterical conditions, associated with ovarian excitement, the vomiting of pregnancy, and all reflex excitements. With quinine it fulfills the same indications as bromide of potassium in such diseases as whooping cough, and excitement from nervous exhaustion. With chloroform and syrup of squills, it is a palatable and efficient cough mixture. Full dose, prepared as above, one drachm.—*Med. and Surg. Reporter*, Oct. 14, 1876. J. S. K.

13. *Oxygen Gas.* HEARD. (*Atlanta Med. and Surg. Journal*, Oct., 1876.)

Dr. H. advocates inhalations of the gas in incipient phthisis, and reports five cases in endorsement. From a review of them it appears that a daily inhalation of four gallons of the the gas removed muco-purulent expectoration and night sweats, improved digestion and increased weight. A brief continuance of treatment cured the cases reported. J. S. K.

14. *Atropia as an Antidote to Hydrocyanic Acid.* JACKSON. (*Druggists' Circular*, Jan., 1876.)

In experimenting on dogs, Dr. J. says: Sulphate of atropia, in doses of one-fourth of a grain to one grain, injected under the skin, gave prompt relief in every case, even when large doses of the acid had been given. When the two poisons are administered at the same time none of the effects of prussic acid are developed; but if as much as a grain of sulphate of atropia be injected, all the symptoms of atropia poisoning are observed. In some instances the antidote was withheld until the animal would fall down, and the respirations would be as few as six per minute, the dog being unconscious, then one-fourth grain of the antidote would relieve him immediately. J. S. K

---

## II. PRACTICAL MEDICINE.

1. *Rheumatism Treated with Salicylate of Soda.* PROF. A. CLARKE. (*The Med. Record*, Oct. 14, 1876.)

Prof. C. treated eleven cases of acute rheumatism—all that occurred in his ward of Bellevue from April 1 to June 1—with this drug. In nine of the cases there was early improvement following the use of the medicine. In two cases the amelioration was more gradual. The influence of the medicine in "lowering the fever heat and diminishing the excited pulse were as marked as its power to relieve pain."

The formula used in all the cases is as follows:

℞ Acid salicylic ..... ʒ iij
Sodæ bicarbonat ..... ʒ ij
Glycerine. } *aa* ..... ℥ ij
Aq. }

M. Sig. Tablespoonful every two hours for the first day, and afterward the same dose six times a day.

No unpleasant effect of any kind was noticed after the administration of the medicine.

2. *A Case of Idiopathic Glossitis.* WINGATE. (*Boston M. and S. Jour*, Sept. 7, 1876.)

The patient was a robust Irish girl, twenty years old. The inflammation seemed causeless. The tongue became enormously swollen, hard and covered with a yellow coating; pain was caused on attempting to protrude it; saliva flowed constantly from the mouth and to speak intelligibly was impossible. She had a moderate fever (103.2° F.) and a pulse of 130. There was nausea and vomiting at first; there was constipation, and, later great weakness.

The invasion of the disorder was gradual; it remained at a high point of severity for three days and slowly subsided. As improvement became established the coating disappeared from the tongue, leaving a dark red surface.

3. *The Cause of Chorea.* BAKER. (*Detroit Review*, Nov., 1876.)

Dr. B. first quotes from Prof. Stevens, of Albany, who holds that chorea is due to an over taxing of the powers of accommodation of the eyes; an over tiring, and, hence, exhaustion of the ciliary muscle in the adjustment of the focus of the eyes for different distances.

In hypermetropia, as objects approach the eyes, the function of accommodation is more severely taxed than in normal eyes. Normal eyes are always at rest when accommodated for distance; hypermetropic eyes are never at rest except when closed.

Effort at accommodation and at convergence are simultaneous and proportioned to each other. "Normal eyes accommodated for twelve inches are also converged for twelve inches." "In hypermetropia the balance is lost. Accommodation for twelve inches requires an exertion that in the normal eye would accommodate for—say. six inches. The eyes would then be converged for six inches. So, there would be accommodation for a foot and convergence for only half that distance. Confusion of nervous and muscular action results.

"Young children have their eyes almost always accommodated for near objects." In these early years the ciliary muscle is kept in a state of extreme tension constantly. When there happens to be hypermetropia there is a conflict constantly between the muscles of accommodation and of convergence, unless there is a compromise by which one eye "agrees to a constant squint." The constant fatigue aud irritation from the conflict referred to, occurring in sensitive children, often at a time when they are

over taxed at school, is such as strongly to predispose to—even to cause chorea, as Dr. S. believes.

Dr. B. believes, with Dr. S., that strain of the ciliary muscle may cause chorea, but that long continued muscular strain of any sort is competent to lead to the disorder, as well as that of the muscle referred to. Over exertion and tiring of any muscle easily lead to tremors. A sudden fright or severe exertion may make the tremors persistent, and we have chorea. Dr. B. quotes a number of cases to substantiate his position.

4. *Maternal Impressions.* WADDEL. (*Detroit Review*, Nov., 1876.)

After a long and exhaustive examination of opinions and authorities as to the anatomical and physiological relations of the mother to the embryo, as to the seeming proof that the mother's mind has power to change the conformation of the fœtus in utero, and to cause deformity; and after considering such evidence in the light of modern embryology and pathological anatomy, Dr. W. ably sums up his conclusions substantially as follows:

1. During embryonic existence certain parts may be hindered or arrested in their development, while others are not disturbed.

2. Ectropic viscera of the abdomen, spina bifida, cleft palate, hare-lip, webbed fingers and toes, etc., are only evidence of arrested developement of embryonic, abdominal, spinal and maxillary processes, or, in case of the webbed extremities, the continuation of the embryonic hand or foot of the second month.

3. Any agency causing arrest of development of any portion of the fœtus must necessarily operate prior to the evolution of that part.

4. The cause of arrested development may be local or general; (a) injuries to the mother's abdomen; (b) diseases of the uterus or its membranes; (c) diseased ovum from diathesis of either parent; (d) hereditary transmission of deformity.

5. Excessive development of parts of the fœtus may obtain, resulting in nevi, aneurisms by anastomoses, supernumerary fingers, toes, etc.

6. Such peculiarities are, in common with family resemblances, frequently transmitted through generations.

7. Intra-uterine amputations are the result of amniotic bands, placental adhesions, fracture, or from pressure of a loop of the umbilical cord.

8. Amniotic bands or placental adhesions may result from inflammation of the uterus, its decidua, or inflammatory disease of the fœtus.

9. These false membranes may cause ampurations of extremities, which may afterward be absorbed as may the false membranes.

10. The so-called double monsters, or fœtus *in fœtu*, are the result of double cicatricula on the blasto-dermic membrane of a single ovum.

11. Twins with a common chorion also result from the development of double cicatricula on the blasto-dermic membrane of a single ovum.

12. In either case there is always unity of sex.

13. The nearness of the primitive traces to each other, determines whether impregnation will result in separate twins or double monster.

14. In twins with single chorion or anastomosis of the placental vessels, one fœtus may become perfectly developed while the other may become monstrous.

15. The development of the abnormality in such cases depends on local anatomical causes, and is governed by definite laws.

16. Every known form of malformation in man has its analogue in the lower animals, birds, fishes and reptiles.

The author next puts the inquiry whether maternal mental impressions may arrest the development of the fœtus in utero and cause deformity; or cause disease in the uterus or membranes, resulting in false bands or placental adhesions; or cause the umbilical cord to encircle and amputate a limb, or cause the death of the fœtus; whether such impression can reach and act on the newly impregnated ovum, leading the double cicatricula to approach each other so closely as to result in union and double monstrosity; or can destroy or deform one fœtus in utero, leaving another in the same membranes uninjured?

Many congenital deformities being shown to arise from causes unconnected with maternal influence, he asks, "Is it possible that at another time exactly the same deformity is produced by the maternal impressions?"

"When it is remembered that no nervous connection exists between the embryo and mother; that there is no direct blood communication; that the mother's mind can have no influence in causing the pathological states which have been shown to be the cause of malformation; that during the first weeks of fœtal life the ovum is surrounded by anatomical conditions precluding maternal influences, whereas it has been shown that the vast majority of malformations have their origin in that period of embryonic life in which the ovum is still homogeneous blastema; when all these facts are remembered it cannot," he says, "be believed that the mother's mind can change the conformation of the fœtus *in utero*."

5. *Epileptic Phenomena in a Case of Cerebral Tumor.* DeBonis. (*Monthly Abst.*, Oct., 1876.)

In an article on the *Annali Clinici dello Ospedale Incurabili di Napoli*, anno i. fasc. 2, Dr. DeB. reviews the recent doctrines regarding epilepsy, and accepts vascular spasm as an explanation; in short, he recognizes epilepsy as a vaso-motor necrosis of the brain. He relates the case of a man, aged sixty, who first suffered severe pains in the frontal and parietal regions, extending to the occiput; the pain was intermittent. Convulsions afterwards appeared; they were preceded by noises in the ears and vertigo, and were repeated several times a day. When young he had had gonorrhœa, soft ulcers, and syphilides. From the anamnesis and the symptoms observed during the attack, the diagnosis was made of epilepsy with chronic meningitis from cerebral syphilis, probably with gummata disseminated in the anterior and middle lobes of the right hemisphere, and encephalitis affecting the origin of the seventh pair. Most of the symptoms—paleness, dilatation of the pupils, clonic convulsions, etc.—were principally manifested on the right side. At the necropsy, there were

found congestion of the membranes of the brain, chronic meningitis, and seven gummatous masses in the cortical substance toward the upper part and the base of the cerebral lobes, some being of old, others of recent formation. There was no appreciable lesion of the medulla oblongata, pons Varolii, cerebral peduncles, hippocampus, etc.

Dr. DeB. remarks that this case shows that from the cerebral mass there may arise irritations, which are directed along the converging fibres to the medulla oblongata and peduncles, determining a super-excitation of the vaso-motor centres, whence arises spastic contraction of the vessels, as shown by the pallidity of face and loss of consciousness. He thus explains the convulsions by spastic ischæmia of the nervous centers.—*Lond. Med. Record*, Aug. 15, 1876.

6. *The Diagnosis of Auditory Vertigo.* GOWERS. (*Monthly Abstract*, Oct., 1876.)

Dr. G. read a paper on this subject before the Section on Medicine, British Medical Association. He said the form of vertigo which depends on an affection of the organ of hearing has very little apparent connection with its cause, and frequently has so obtrusive an association with the *gastric* functions that the real nature of these cases is constantly misconceived by the sufferers, and frequently by our own profession. There are several ways in which the stomach symptoms obscure the real nature of the affection. The paroxysms of vertigo commonly lead to vomiting. Sometimes they cause only an attack of dyspepsia, to which the giddiness is thought to be due. But, further, so intimate are the mutual action and reaction of the pneumogastric and equilibrium nerves and centers, that in the subjects of "auditory vertigo" a paroxysm, quite special in form, may be excited by a primary gastric disturbance, to which the whole trouble is naturally ascribed. The subjects of auditory vertigo, besides their acute paroxysms, are usually liable to slighter but more continuous sense of disturbed equilibrium, taking the form not of a definite movement, but merely of vague instability, and this is in constant relation to the gastric function. The slightest stomach disturbance at once excites the feeling, and careful dietetic management is necessary to keep the patient free from it. Among the points to be especially attended to in diagnosing auditory from pure gastric vertigo are the following: The occurrence of intense paroxysms of vertigo, especially if repeated, is in favor of their labyrinthine origin. In many forms of vertigo, paroxysms occur, but in none so intense as in this form. The character of the sensation is of great significance. When purely gastric, it is usually indefinite; and labyrinthine vertigo is usually definite. There is a sense of movement in a certain direction, usually uniform. Often there is actual movement. Lastly, evidence is usually to be obtained of affection of the auditory nerve or apparatus—unilateral, or greater on one side than on the other—tinnitus and deafness. The deafness may be due to atmospheric vibrations, or to those conducted through the skull. The latter, a well known symptom of labyrinthine disease, is of great service in the diag-

nosis of auditory vertigo. Two illustrative cases were narrated. In the first, characteristic auditory vertigo co-existed with some other affection of cranial nerves, interference with smell and taste, etc. The patient suffered also from chronic ulcer of the stomach, and the gastric disturbance excited paroxysms of vertigo. The patient always fell to the right and backwards, and the right ear alone presented perverted function. Although the special gastric association in this case was accidental, the confusion in diagnosis to which it gave rise was typical, and was only cleared by careful invest'gation of the form of the vertigo. In the second case, a gentleman aged thirty-five, suffered from slight dizziness, with dyspeptic symptoms, to which he ascribed it. On examination, however, there was clear evidence of labyrinthine mischief, and a history of paroxysms of vertigo most characteristic in form. In these he fell to the right, the auditory affection being on the left side. He fell with such violence as to knock down a friend who was on his right side. In other attacks objects seemed to move from the right, although he did not fall. One severe paroxysm was excited by a hearty meal after long fasting. The paper concluded with some remarks on the diagnosis of the severer paroxysms from slight apoplectic siezures and from attacks of *petit mal.—British Med. Journal*, Aug. 26, 1876.

7. *The Nursing and Weaning of Infants and Young Animals.* MAGNE. (*L'Union Méd.*, No. 118.)

The difference between the nursing of the young of human beings and other animals is neither explicable by their organization nor conformable to the laws of physiology. Why, for example, is an artificial diet generally considered so injurious to infants, when it is so successful in young animals; and why do alimentary substances, when substituted for or added to milk, prove injurious to the former and useful to the latter?

The writer believes it to be irrational to give an infant breast milk exclusively till it is one year old, and afterward to administer to it pap containing bread, rice, milk, etc. These latter are eminently unfit to be substitutes for milk, and yet milk itself is insufficient as a sole aliment for children who have passed the sixth, seventh, eighth and tenth month. These statements are based upon the ascertained inefficacy of those articles of food in supplying the material for tissue waste, and in repairing the losses which the organism is liable to suffer.

The needs of the infant increase with its age. As its skeleton becomes longer and its muscles more voluminous, it requires more phosphates and albuminoid matters than during the first months of life. Now, the mother's milk cannot, for twelve months, augment in the same proportion as the requirements and according to the needs of her nursling. The writer has, on several occasions, recommended for children eleven and twelve months of age, of fair constitution, but who were yet unable to walk, the eating of raw eggs. One or two of these, daily, sufficed to produce a clear color of the skin, firm flesh and the ability to walk unaided.

Those who busy themselves with the rearing of the young of animals

have brought about successive and considerable modifications in their system, and have decided that incomparably the best results are obtained by early weaning. Without an artificial diet, commenced almost immediately after birth, the public would never see at the Expositions immense bulls with cylindrical bodies and thick muscles, and powerful draught horses which gain the prizes. The more intelligent of stock raisers employ a nutritious substance whose composition is nearly that of milk, but which is much more preferable because it is less watery and more substantial.

The more complicated the composition of one of these milk substitutes the more it is nutritious. Products which naturally serve as nourishment are thought to be much more available by extracting their essence, by disengaging their alimentary part. This is an error.

Meat is too systematically excluded from the dietary of the nursery. Man is carnivorous in infancy as in adult life. The extract and juice of meat cannot take the place of meat itself for the child. Among available articles mentioned are, eggs, raw and cooked; meat, and the flour of various vegetable productions.

The discussion of this paper evoked great opposition among the members of the Academy of Medicine.

---

## III. Surgery.

1. *Traumatic Tetanus cured by Nerve-stretching.* Vogt. (*Centralbl. f. Chir.*, No. 40, 1876.)

Since the publication of Prof. Nussbaum's famous case of neuralgia cured by stretching the cervical plexus, the operation of nerve-stretching has been repeatedly performed by Nussbaum, Billroth, Callender, Vogt, and others. The operation was applied for the cure of neuralgia, clonic spasms and various other nervous affections. It always had the desired effect, and proved to be free from danger. These good results surely warranted the experiment of the operation in the following case: On August 23, a stone mason, aged sixty-three years, had his right hand wounded by a heavy stone. The large flap wound of the palm of the hand kindly healed under antiseptic dressings, while the smaller wound of the back of the hand very slowly healed by granulations. On September 7, the attending physician found the first evidence of trismus, and two days later tetanus supervened. On September 16, Prof. Vogt found the patient suffering from a continuous lock-jaw, and he was frequently seized with violent attacks of opisthotonos and clonic spasms, while the lower extremities were excessively rigid. Neither the recent thick cicatrix in the palm of the right hand, nor the surroundings of the well granulating wound at the back of the hand, showed any tenderness on pressure. No painful spots existed in the course of the nerves of the forearm or arm; but the region of the brachial plexus

was so sensitive that the slightest touch produced convulsions. The patient, in spite of all treatment, had been daily growing worse; therefore the professor at once resorted to the traction upon the brachial plexus. First, however, the palmar cicatrix was cut into and freed from the aponeurosis and the tendons; a foreign body was not found. On the right side of the neck, then, a longitudinal incision was made, parallel to the anterior border of the trapezius muscle, and in the triangular space between the trapezius, omohyoid and scalenus muscles, the brachial plexus was exposed. The sheath of the nerves being severed, a blunt hook was passed under the nerves to lift them out of their surroundings. The flexed forefinger could there be substituted for the hook, and make energetic tractions on the central as well as the peripheric portions of the nerves. The sheath of the nerves, looking exceedingly hyperæmic, was split up as far as the intervertebral foramina. A drainage tube was put in, and the wound was dressed antiseptically. No sooner had the patient recovered from the narcosis than he could open his mouth sufficiently to put out his tongue and to take some fluid nourishment. The tetanic rigidity and spasms of the muscles had entirely disappeared and did not return, a few slight momentary twitchings in the neck and back excepted, which occurred on the patient's first sitting up in a chair. The patient felt exceedingly weak, and slept very much during the day, while at night morphia had to be administered for restlessness. No other medicine was used. And now, ten days after the operation, the wounds are nearly healed, and the patient can, *ad libitum*, stand and sit and walk; nor does he experience any disturbance of sensibility or motility in his right arm.

2. *Resection of the Superior Maxilla with Preservation of the Infra-orbital Nerve.* LETIEVANT. (*Archives Générales de Méd.*, Oct., 1876.)

The author recalls the idea expressed by Longet and other physiologists, that the sensitive filaments of nerves exercise a nutritive influence upon muscular fiber. The results of the operation of ablation of the superior maxilla, with preservation and destruction of the infra-orbital nerve, are compared:

1. Destruction of nerve. The results were simple, with the exception of a slight attack of intercurrent erysipelas. The patient left the hospital affected with slight œdema of the cheek, and preserving cutaneous sensibility. Eight months afterward the mobility of the upper lip was slight, and the patient could not puff both cheeks without the escape of air. Electrization of muscles through the skin did not secure contraction; and when the needles were implanted in the muscles there was no greater effect.

2. Preservation of nerve. This is readily accomplished, and does not add much to the time of duration of the operation, if the entire nerve is laid bare and elevated; the suborbital tissue is left attached to the deep portion of the zygoma. Thirteen months after the operation all the facial muscles contracted; sensibility, as determined by the æsthesiometer, was absolutely alike on both sides; pressure only did not produce the same sensation as before, in consequence of destruction of the anterior dental

filaments. The restoration of the face was remarkable, thanks to the osseous tripod left by the surgeon; cicatrization had not deformed the visage; and, more, an inodular mass filled the hiatus left by the maxillary line.

3. *Treatment of Tracheal and Laryngeal Stenosis by Dilatation.* THAOU. (*Le Progrès Méd.*, No. 38.)

Syphilis, small-pox and typhoid fever, from their tracheal and laryngeal localizations, are the most frequent causes of contractions of the ærial conduit, and in these stenosis is most surely caused by submucous lesions. Perichondritis is almost invariably observed, and in its train occur necrosis of bone and anchylosis of the small articulations. It develops an exudation which leads to prominence of the mucous membrane, ulceration or fibrous transformation, compressed and therefore inactive muscles, which undergo fatty degeneration. These processes are hardly evident to the laryngoscope. Sometimes the epiglottis is destroyed and falls upon the glottis, where, becoming adherent, it remains fixed in a vicious position.

It must be elevated with a curved sound in order to uncover the completely obstructed glottis. It is surprising that respiration should be possible through such a tortuous and occluded canal. Sometimes the tube is closed by a true diaphragm, more or less excentrically perforated, and composed of a whitish cicatricial membrane.

The symptoms are referable to a distant date, when there was hoarseness, dyspnœa, and a sense of suffocation. Then tracheotomy does not cure; it saves life, but leaves behind the stricture which pre-existed, and a true fistule of a dangerous character. Existence at such a price is dear.

Before the tracheal tube can be removed, the natural passage-way of the air must be restored. Liston (1827), Czermak (1851), Gûérin, Richet, Busch, Brake, Gurlt, Bruns, Dolbeau, Gerhardt, Treudelenburg, operated by instruments passed upward through the artificial opening.

The direct method (by the mouth) has been tried by only Roux, Desprès, Thiersch and Navratil — always without success.

After two months' trial with the method of Schrötter, the author is disposed to recommend it highly. The former operates by the superior or natural passage, but the method of operating and the form of his instruments vary according to whether there (*a*) is or (*b*) is not a surgical opening in the neck.

(*a*) In this case the tracheal fistula is utilized only for the purpose of fixing in the larynx a dilating prism, introduced through the mouth. The prisms are zinc, triangular in shape, with rounded borders, and resemble in form the glottis. Inferiorly they present a small narrowed neck, surmounted by an equally small rounded head. The prism descends into the air passage and becomes engaged in the opened tracheal cannula, toward its dome. A pair of slender forceps, capable of continuous pressure, is introduced through the neck, seizes the prism at its constricted part, and holds it in place. At its upper extremity the prism is provided with a stout thread. At the time of introduction this thread is made to pass through a long curved tube, when it is firmly fastened by a knot to the handle by

which the tube is carried. Thus constituted, the apparatus represents an uninterrupted instrument, composed of a curved branch (the tube) and a terminal enlargement (the prism). By the aid of the laryngeal mirror, it is engaged in the larynx and fixed below by the tracheal forceps. The knot is then unfastened; the tube, which is no longer retained by the prism, is withdrawn; and the thread, which remains attached to the prism, is brought out of the mouth and attached to the ear. The patient or physician has but to draw upon the thread and open the forceps in order to extract the prism from the larynx.

Some education of the parts is requisite before proceeding to the dilatation, which is accomplished by the successive introduction of a series of prisms, numbered from one to twenty-four — the smallest being eight millimeters in one measurement and six in the other, the largest being twenty by sixteen. All are four centimeters long. The duration of the dilatation is from a few minutes at the outset to the entire night, the patient being finally able to sleep with the instrument *in situ*, because accustomed to its presence. The results are satisfactory to a surprising degree. Soon the knife or galvano-cauter may be used to divide a bridle, or various caustic applications may be made to localized swollen tissue. Sometimes the voice returns, or the patient can breathe and talk with the cannula closed. Insuccess is due generally to obstructions lower down. Of course more recent cases afford the best results.

(*b*) In non-tracheotomized subjects the sounds are adapted to the different conditions, and the patients learn to use them themselves. The base of the tongue is depressed with the finger, and the instrument made to penetrate the larynx without hesitation. Schrötter employs also rubber sounds, somewhat longer than those described above, with a triangular laryngeal extremity and rounded borders. Lateral openings are made for the exit of mucous secretions. There is also an oval shield of hard rubber, so arranged that the expectorated secretions are directed to the floor, and not in the face of the operator. Often a previous incision of the obturator membrane by the knife or cauter is requisite before the introduction of the sound.

4. *Diseases of the Nose treated by Medicated Bougies.* CATTI. (*Memorabilien*, 1876, No. 9.)

At a meeting of the Vienna Medical Society, Catti showed some gelatine bougies charged with astringent medicines — as sulphate of copper, zinc, carbolic acid, tincture of rhatanny. They are from eight to eleven centimeters long, and from four to six centimeters thick. By a slow rotatory motion they are introduced into the nasal cavity, and by giving them a horizontal or slanting or perpendicular direction they can be inserted into the lower or middle nasal passage. The bougie inserted, the nostril is plucked with charpie or cotton, and in a few hours it will be entirely melted. By a regular continued use of such bougies Catti obtained very good results in the treatment of chronic catarrh of the nose and naso-pharyngeal space and of the ozæna.

## ANNOUNCEMENTS FOR THE MONTH.

**MONDAYS.** SOCIETIES.
*Mondays, Dec. 4 and 18.*—Chicago Medical Society. Regular meetings.
*Mondays. Dec. 11 and 25.*—Chicago Soc. of Phys. and Surgeons. Regular meetings.
CLINICS. *Every Monday.*
At Eye and Ear Infirmary, 2 P. M.—Prof. Holmes.
At Central Dispensary (Wood and Harrison sts.), 2 P.M. *Gynecological*—Dr. Adolphus.
At Mercy Hospital—2 P. M., *Surgical*, Prof. Andrews.
At Rush College—2½ P. M., *Medical*, Dr. Bridge.
At Chicago College, 2 P. M *Gynecological*—Prof. Merriman.
LECTURES. *Every Monday.*
At Rush Medical College (Harrison and Wood sts.)—9½ to 12½ o'clock, Profs. Freer, Lyman and Powell; 4 to 6, Profs. Gunn and Haines. At Chicago College—8½ to 12½, Profs. Jewell, Hyde, Hatfield and Bond; 3 to 6, Profs. Nelson and Davis, Quine and Andrews, and Roler. At Woman's College—8½ to 11½, Profs. Hotz, Marguerat and Earle; 3 to 5, Profs. Paoli and Stevenson.

**TUESDAYS.** SOCIETIES.
*Tuesday, Dec. 12.*—Academy of Science. Regular meeting at 8 P.M. (263 Wabash av.)
CLINICS. *Every Tuesday.*
At Eye and Ear Infirmary—2 P. M., Prof. Jones.
At County Hospital—2 P. M., *Medical*, Prof. Ross. 3 P. M., *Surgical*, Prof. Powell.
At Mercy Hospital—2 P. M., *Medical*, Prof. Hollister.
At Chicago College—2 P. M., *Gynecological*, Prof. Roler.
At Central Dispensary—2, *Surgical*, Dr. Graham.
LECTURES. *Every Tuesday.*
At Rush College—9½ to 12½, Profs. Miller, Allen and Parkes; 4 to 6, Profs. Gunn and Haines. At Chicago College—8½ to 12½, Profs. Jewell, Quine, Merriman and Bond; 3 to 6, Profs. Johnson and Nelson, Andrews and Hatfield, and Byford. At Woman's College—9 to 12, Profs. Bartlett, Bogue and Fitch; 3 and 5, Profs. Thompson and Macdonald.

**WEDNESDAYS.** CLINICS. *Every Wednesday.*
At Eye and Ear Infirmary—2 P. M., Prof. Holmes.
At County Hospital—2 P. M., *Gynecological*, Prof. Fitch; 2 P. M., *Ophthalmological*, Dr. Montgomery.
At Chicago College—2 P. M., *Gynecological*, Prof. Nelson.
At Mercy Hospital—2 P. M., *Ophthalmological*, Prof. Jones.
At Central Dispensary—3 P. M., *Dermatological*, Dr. Maynard.
LECTURES. *Every Wednesday.*
At Rush College—9½ to 12½, Profs. Freer, Allen and Parkes; 4 to 6, Profs. Etheridge and Haines. At Chicago College—8½ to 12½, Profs. Hyde, Isham, Hatfield and Bond; 3 to 6, Profs. Davis and Curtis, Quine and Jones, and Roler. At Woman's College—9 to 12, Profs. Marguerat, Curtis and Blake; 3 to 6, Paoli, Graham and Stevenson.

**THURSDAYS.** CLINICS. *Every Thursday.*
At Eye and Ear Infirmary—2 P. M., Prof. Hotz.
At Mercy Hospital—2 P. M., *Medical*, Prof. Davis.
At Rush College—2 P. M., *Medical*, Prof. Ross; 3 P. M., *Diseases of the Nervous System*, Prof. Lyman.
At Chicago College—2 P. M., *Gynecological*, Prof. Merriman.
At Central Dispensary—2 P.M., *Surgical*, Dr. Graham.
LECTURES. *Every Thursday.*
At Rush College—9½ to 12½, Profs. Miller, Allen and Parkes; 4 to 6, Profs. Gunn and Etheridge. At Chicago College—8½ to 12½, Profs. Hollister, Isham, Merriman and Bond; 3 to 6, Profs. Johnson and Nelson, Andrews and Hatfield, and Byford. At Woman's College—9 to 12, Profs. Dyas, Bogue and Fitch; 5, Prof. Macdonald.

**FRIDAYS.** SOCIETIES.
*Friday, Dec. 8.*—State Microscopical Society of Illinois. Regular meeting, 8 P. M.
CLINICS. *Every Friday.*
At County Hospital—2 P. M., *Medical*, Prof. Ross; 3 P. M., *Surgical*, Prof. Powell.
At Mercy Hospital—2 P. M., *Medical*, Prof. Davis.
At Chicago College—2 P. M., *Gynecological*, Prof. Roler.
At Central Dispensary—2 P. M., *Gynecological*, Dr. Adolphus.
LECTURES. *Every Friday.*
At Rush College—9½ to 12½, Profs. Freer, Allen and Parkes; 4 to 6, Profs. Gunn and Holmes. At Chicago College—8½ to 12½, Profs. Hollister, Isham, Hatfield and Bond; 3 to 6, Profs. Davis and Curtis, Jones and Quine, and Roler. At Woman's College—9 to 12, Profs. Bartlett, Marguerat and Curtis; 5, Prof. Stevenson.

**SATURDAYS.** CLINICS. *Every Saturday.*
At Chicago College—2 P. M., *Surgical*, Prof. Andrews or Isham; *Gynecological*, Prof. Nelson; 3 P. M., *Medical*, Prof. Johnson.
At Rush College—2 P. M., *Surgical*, Prof. Gunn.
LECTURES. *Every Saturday.*
At Rush College—9½ to 12½, Profs. Lyman, Miller, Etheridge and Parks. At Chicago College, 8½ to 11½, Profs. Hollister, Quine and Hyde; 3 to 6, Profs. Nelson and Johnson, Andrews and Quine and Byford. At Woman's College—9 to 11, Profs. Earle and Fitch; 3 and 5, Profs. Paoli and Macdonald.

At all the above named Clinics visiting regular practitioners are, we believe, admitted.
At the South Side Dispensary (Chicago College) there are six daily special Clinics, for sections of the classes of the Chicago College.